Flight

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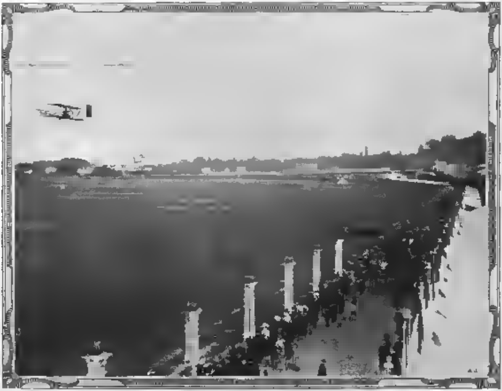

JUVISY AVIATION WEEK.—M. Paulhan, on his Voisin biplane, and Count de Lambert (nearest), on his Wright flyer, during the contests at Port Aviation, near Paris, at the end of last week. General view of the aerodrome taken from the top of the Grand Stand.

THE TIME OF CIRCUSES.

Certainly, as a movement flight has bulked very largely in the public view during the last fortnight, and it looks like doing so for at least as long to come. One supposes that this must be regarded as an inevitable though far from elevating advertising stage in the new industry. At least, it is the circus season in matters aeronautical when there is an unseemly scramble for gold on the part of those who are prepared to act the part of public performers—not a vestige of dignified competition between responsible manufacturers or sporting rivalry between private owners of flying machines. Hence, it is but to be expected that all the accompaniment of blatant advertisement that is essential to the circus profession should be in evidence in connection with the first serious attempts at flying meetings in Britain. There is, however, something more than the publicity which circus managers are fain to strive after, and it is rather this that is of importance to all who are seriously interesting themselves with future progress. We assume that our readers have not been slow to detect the influences that have been plainly at work in connection with the publicity that has been given, more especially to the Doncaster Meeting; influences, we mean, which are not the concern either of the Aero Club or of the promoters of that meeting, neither of which parties can be held responsible for them in any sense, but influences by which it has been sought to seize upon the occasion of a difference of opinion, with the palpable hope of undermining the authority of the Aero Club and of the existing International Federation that includes the aeronautical clubs of America and of all the leading countries of Europe. It is an opportunity, in fact, which quite a number of parties with no concern with Doncaster have seized on in the hope of making capital out of it, because in the first place it is plain that there is in the field at least one newly formed association that has thrust itself forward hitherto in the public view wholly as a one-man show but for which it is clearly desired to secure the control of a movement which had already been established by the time it came into being. On the other hand, what could be more favourable than the opportunity afforded to any whose own individual purposes are served by stirring up strife and creating rival sections? Here, in fact, has been a chance—only too readily seized by influences against which every real well-wisher of the movement should be placed upon his guard—of raising a misleading ado in public in the widest possible sense, since the columns of the daily papers have been thrown open to the business of flight, *apropos* of these Blackpool and Doncaster meetings, with the very laudable intention of helping forward practical aeroplaning and all endeavours to demonstrate to the public that man can fly. Because of the laudable character of the intention, we wish to preface our further remarks with a statement that we are absolutely convinced that whatever attitude any of the great daily papers have adopted throughout the controversy of the past week that has raged around Doncaster such attitude is entirely honest as to its intention. Unhappily, however, in this business of flight something more than honesty of purpose is called for on occasion. Indeed, sound knowledge of the ins and outs of the situation is essential if one is not to be led unwittingly into error.

If we were to devote the whole of this issue to showing up the true import of every attack that has been made on the Aero Club of the U.K., and every misstatement that has been published concerning that body and its attitude towards Doncaster, it is doubtful if the space available would suffice for the purpose. We are, therefore, not going into any details, but will content ourselves with dealing merely with the proposition in general terms with a view of preventing the *bona fide* advocates of the science and sport of flight from being deceived by the tactics that have been adopted. So little real knowledge is possessed by most of those who have been immediately responsible for what has appeared in the Press that as far as the general public are concerned the effect which those in the background have desired to produce, namely, of bringing aeronautical bodies in general into disrepute, has been achieved for the time being. But in doing so it cannot be said that any institution that has been mentioned has gained anything. Quite otherwise, the public must have gained the impression that almost any aeronautical body which can be named is utterly void of power, is utterly unneeded, and is a thing more or less to be utterly condemned.

So, just when flight is, as it were, making its *début* in public fashion in Britain, the idea is being assiduously circulated by some who would pose as leaders in the cause, that even those organisations which were in being long before men could fly and which have striven consistently to foster mechanical aerial locomotion, have no accepted standing in aeronautic circles. Also the public are being misled into the notion that there is not the slightest need for any institution whatsoever to look after the interests alike of the performers and of the industry of producing the machines they employ. It is assumed that the task of properly conducting flying competitions is as simple as organising a horse-race, or refereeing at a football match. For example, the analogy of the Jockey Club in relation to horse-racing has been cited, but the cases are not parallel in any way, for the Jockey Club was not formed till about 1750, whereas horse-racing had been a sport familiar not only in the ancient world, but regularly exploited in England from quite early times, centuries before the Jockey Club came into being. But in the case of the recognised aeronautical institutions, they were in existence before—and their existence had much to do with the evolution of—the aeroplane of the power-driven sort that came after them. And whereas, in the case of horses, man can do nothing more than breed by selection, in the case of machinery such as an aeroplane, there are practically no limits to the directions in which developments may take place. We have in the immediately preceding sister movement, motoring, an example of how vital, and how entirely successful have been the efforts of the associations that were in being at the dawn of that movement, in developing cheap, durable and luxurious cars in the extraordinarily rapid fashion that has been possible, and in very great measure through the International alliance of the representative bodies that controlled the sport from the outset. That is one of the principal reasons why we have got and we must continue to have, like bodies in regard to the flying movement. It is to the advantage of all societies in this country that the spirit of unity should be abroad for their own strengthening. So long as the non-aeronautic public sees signs of discord it will attach little or no importance to any one body connected with the movement, and especially to those that lend themselves to the self-interest of the individual.

This point is of the utmost importance to anybody interested in flight, because we must not cozen ourselves that the movement in which we all take such a keen interest is one that will not meet with as sudden and serious opposition as, at the moment, it is receiving a welcome. The general public is tickled with it nowadays because it is an entertainment savouring of the sensational and spectacular. People do not necessarily think of it as anything more than a daring and novel acrobatic performance. Therein lies the danger. This period of circusing, as it were, may last a matter of two years at most before it will cease to attract alike on the ground of our growing familiarity with the sight, and on the ground that the point-to-point or cross-country flight—followed by the reliability trial—will entirely eclipse it in interest. It is certain that flight will develop sufficiently rapidly to render such competitions possible before so very many seasons have come and gone. Obviously, it is necessary for it to do so if there is to be established any manufacturing industry on an appreciable scale, because people who wish to fly for sport will not think much of it if they cannot travel from point to point. The certainty of development along those lines means happily that there is a very distinct time limit to the operations of speculators of the showman type, who are promoting the flying meetings now in vogue by the hiring of the various performers under cash contracts to play certain allotted rôles. As regards the future therefore, there is no call to worry in respect of the conduct of really useful competitions for there will then be but little chance for any over-zealous malcontents to obtain a hearing, either from the competitors or from the interested section of the public of those times. But this point-to-point aerial travelling which will be the first really practical stage of the movement, will be the beginning of a long period of possibly gradually increasing prejudice against it, on account, for example, of accidents that are bound to occur, and for many other reasons because an appreciable section of the public, which may be glad enough to amuse itself by watching exhibition flights over specified grounds, will be assuredly far from tardy to resent the subsequent "intrusion" of the aeroplane into "private life." Against such prejudice, what chance would the movement have of survival were it not represented by a solidly-supported and mutually consistent series of organisations for fostering it such as it has already? The whole and the sole possibility of making any effective stand will devolve upon the united strength of the parent bodies that are already allied under an agreement, whereby the Aeronautical Society stands for the scientific, the Aero Club for the sporting and social, and the Aerial League for the patriotic and propaganda phases of the movement. Wherefore each institution after its kind ought, as a matter of course, to be afforded the hearty support from every one of the local bodies throughout the country so that the representatives of the flying movement from one end to the other end of the Kingdom may be able at any moment to present a united and unanimous attitude on any given point connected with it. That, moreover is the one and only way whereby the public and the general Press can be induced to receive aeronautical opinion with profound respect.

We trust, therefore, we have made it plain that, for motives of the most selfish interest to the aeronautic community as an honest community—if one cares to put it at its meanest—there is everything to be gained by an increasingly closer alliance. Such exhibitions as that into which we are sure the well-meaning correspondent of the *Daily Telegraph* has been unwittingly trapped earlier this week occur through the lamentable exploitation of self-interest on the part of individuals who associate themselves with aeronautics, and who are plainly none too scrupulous in their statements when they come across a pressman in quest of information who does not chance to be sufficiently *au fait* with the subject to be able to discriminate between strict truth and sheer romance. Happily, many misstatements thus made have been corrected, as well in the pages of the journal in question as elsewhere. Influencing the publication of such articles in any quarter of the Press is something to be deplored alike because of the loss of prestige incurred to the organ concerned and of the damage unwittingly done to internationally-recognised institutions that exist for the sole aim of assisting the movement—not from personal but from disinterested motives. The amount of damage that can be done by anybody who cares to start any opposition venture for the purpose of self-advertisement, and by means of reckless statements, is immense. Hence it behoves every upholder of true progress, no matter what aeronautic organisation he may belong to individually to see to it on all possible occasions, that that organisation is not carrying on a semi-veiled propaganda of striving to wreck other bodies that are far older established than itself and that it is not being run principally to serve the personal ends of some one individual or group of speculators, far less by an individual who is out to make profit from the movement as well by the selling of machines as from the process of company promoting.

There is something peculiarly *apropos* to the present situation in the fact that elsewhere in the current issue we publish the official text of the Aero Club of the United Kingdom's scheme of association with the representative institutions throughout the country. It is alleged by those who desire to substitute some organisation in which they themselves are more or less directly interested that it has been the desire of the parent Club to prevent smaller bodies having any direct voice in the national and international phases of the aeronautical movement. By way of complete refutation of any such absurd idea, we recommend a perusal of the text of the document in question which reveals that such statements are anything but justified, and that the scheme is pre-eminently of a democratic character. In the first place, it will be noted that the General Committee which, among other functions, has the sole right to appoint the British delegates for the Federation Internationale Aeronautique is to be composed to no greater extent of members of the parent Club than of members appointed by every associated club throughout the country. Representation on the General Committee is, in fact, in strict relationship to the membership of each and every associated body—roughly speaking one headquarter representative for every hundred members. Further the amount of money which will be available for the use of the General Committee for the advancement of the cause throughout the entire Kingdom is to be derived from a fee of half-a-crown per annum for every member alike of the parent Club and of the associated bodies. The complete system is therefore as democratic and as free as could well be conceived by anyone and as we have pointed out before, there can be no possible excuse for setting up any rival institutions to those already established when the policy pursued by any such national society of co-ordination must necessarily be in strict accordance with the united wishes of the whole membership.

A USEFUL SIGNALLING SYSTEM.

All those who were fortunate enough to be present at the historical Rheims Aviation Meeting, are unanimous in expressing their appreciation of the systematic manner in which it was conducted, and by no means the least important among the many well thought out details was the excellent system of signals by which spectators were kept *au fait* with the progress of the meeting.

Signalling Flagstaff

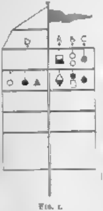

Fig. 1.

Signals indicating Event (see Column A of Flagstaff)

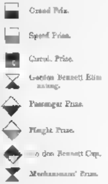

Fig. 2.

Our diagrams, which are taken from the official programme, illustrate the signals employed. Fig. 1 is a general view of the flagstaff with its horizontal spars, and shows the system on which the various signs were displayed conveying, by reference to the programme, particulars of what was going on. Each of the spars refers to one competitor, and the signals suspended therefrom are read as follows:—The two-colour signal (under A) indicates the event (see Fig. 2), the double signal, B, denotes, by means of a classified list, the particular machine in flight. This list we do not reproduce, as it is purely a matter of combining these signs for any meeting to identify any number of competitors. The single signal under C is one of ten forming Fig. 3, and denoting specific messages to the public. Lastly the three-sign signal to the left of the flagstaff in Fig. 1, under D, represents a three-figure code number (for figures refer to Fig. 3) which permits an almost unlimited number of messages to be signalled. A large selection of information was thus tabulated in the programme, giving causes of stoppages, velocity of wind, &c. &c. It is, of course, quite unnecessary to reproduce the entire code list, but the following examples serve to indicate its variety: 126 (the example shown in the diagram) two passengers on board. Others were 114, 40 kilometres flown; 129, 70 metres altitude; 179, propeller being replaced; 196, arrival of the President of the Republic. The messages given in our tables are, of course, only examples, and any variations in these could, of course, be devised. At the mast-head, as most of our readers know, there was kept flying throughout the Rheims week, a red, white, or black flag, visible at a good distance, denoting whether flight was in progress or otherwise, as shown in Fig. 4.

Signal.	Code No.	Meaning of Signal (see Column C of Flagstaff)
○	1	Record beaten.
●	2	Bad start or bad finish.
◍	3	Good start or good finish.
△	4	Stoppage without accident.
▲	5	Call for mechanics.
▲	6	Machine touched ground, or False turn at post.
□	7	Secret official signal.
■	8	— —
■	9	
⧗	0	Announcing signal.

Fig. 3.

Mast-head Signals.

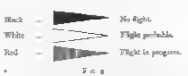

Fig. 4.

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The "Street" at Shellbeach, being the aeroplane sheds of the rapidly growing colony of flyers at the Aero Club's flying grounds in the Isle of Sheppey. The white patch in the foreground is not water but shells.

THE FARMAN BIPLANE.

One of the most successful pioneers in the practical side of aviation—winner of the historic Deutsch-Archdeacon prize by the accomplishment of the first circular kilometre, and hero of the first cross-country flight—Henry Farman has only latterly taken up the design and construction of the machines which bear his name. In his early work he used a Voisin flyer, and throughout the many succeeding experiments, in which one modification or another was made in respect to detail, the machine still retained most of what are, after all, the essential characteristics of the Voisin type.

The Farman flyer of to-day is a biplane; it has a biplane tail carried on a rearwardly projecting outrigger, and it has a monoplane elevator in front. Where the Farman design differs materially from the Voisin system, however, is that the machine is totally devoid of vertical panels, either between the main decks or the supporting members of the tail. There is, of course, a rudder, or to be more precise two rudders which work in unison, but there is no prow, not even so much as exists on the Voisin flyer where the covering in of the elevator outrigger serves this purpose to a certain extent.

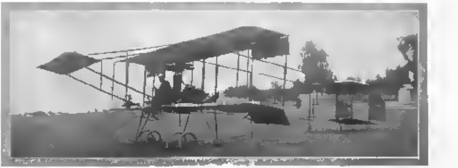
One very natural consequence of the absence of this vertical surfacing in the Farman machine, is that it has a much lighter appearance, for there is nothing so well calculated to make a flyer look heavy as to box it in with side curtains. Another important feature of the Farman flyer, and one which originated on this machine, is the combination wheel-and-skid chassis. Being designed for launching by running along the ground, wheels are essential in the construction, but Mr. Farman was one of the first to appreciate the advantages of the skid on the Wright machine when it came to landing after a flight. A suspension which is in every way satisfactory for running about over smooth ground, preparatory to the start, is by no means necessarily adequate to meet the very severe shocks which are apt to be associated with descents on ground which has not exactly been chosen for the purpose. Here the advantages of skids assert themselves, the extent of their tread and of their strength to resist impact being particularly valuable under such circumstances.

The Main Decks.

The main decks have a span of 32 ft. 6 ins. and measure 6 ft. 4 ins. on the chord; their aspect ratio is thus 5·1. The framework of the decks consists of two parallel transverse main spars, which pass from one extremity of the span to the other and lie parallel about 4 ft. 9 ins. apart. Across these spars are fastened curved ribs which overlap the rear spar by a distance of 1 ft. 7 ins.; the ribs are flush with the front spar which forms the leading edge of the deck.

The decks are single-surfaced with ordinary fine canvas, but the spars and the ribs are nevertheless enclosed in pockets of the same material. This is done in order to avoid sharp angles. The strips of fabric forming pockets for the ribs are sewn on to the upper surface. The pocket for the front spar is formed by turning back the main sheet of fabric, the edge of which is then stuck down on to the under surface. The pocket for the rear spar is formed by similarly attaching another strip of fabric to the under surface of the deck.

That part of the deck formed by the projection of the ribs beyond the rear spar constitutes a flexible trailing edge. It is not, however, continuous either in the top deck or the bottom deck, owing to the provision of hinged balancing flaps and the necessity for accommodating the propeller. The hinged balancing planes are constituted by those portions of the trailing edge lying between the last pair of main struts at each end of the span. The accommodation of the propeller involves the cutting away of the trailing edge of the lower deck only between the main spars of the outrigger frame.



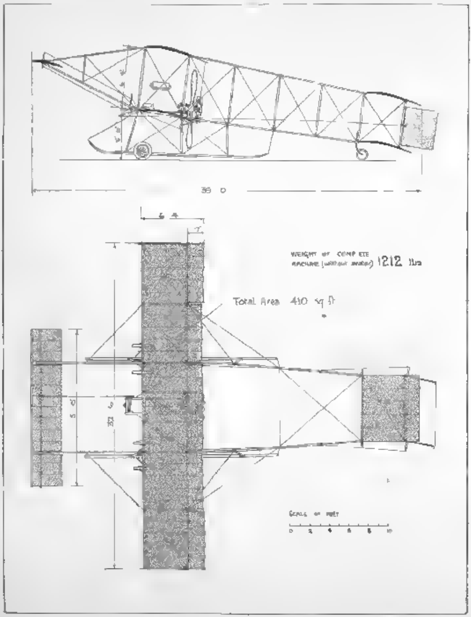
The Farman Biplane, with Mr. Henry Farman at the wheel.

The main decks are separated by vertical ash struts 6 ft. 4 ins. in height. The section of the struts forms a pointed oval. Diagonal wire ties crossing between the extremities of the struts brace the whole structure into a lattice girder.

The Framework.

In addition to the framework of the main decks, the complete machine includes two outriggers for the elevator and tail respectively, and a chassis for the support of the machine upon the ground. All of these members are constructed of timber and wire, ash being the principal wood used.

The tail outrigger is built up of four longitudinal ash spars having a rectangular section. These are braced by vertical ash struts set in flanged aluminium sockets, and lugs attached to these sockets afford an anchorage for the adjustable diagonal tie-wires. There are no


39 0
6 4
7
WEIGHT OF COMPLETE MACHINE (without water) 1212 lbs
Total Area 410 sq ft
5 0
32 6
SCALE OF FEET
0
2
4
6
8
10

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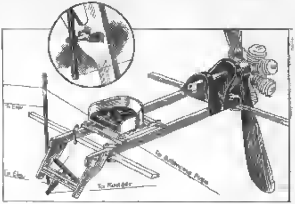
The Farman Flyer, 1909 type.

transverse struts between the spars, except those formed by the transverse spars of the main decks and tail. It will be noticed on reference to the drawing of the machine, that the longitudinal spars in the tail outrigger converge as they recede from the main decks.

The elevator outrigger forms in elevation an isosceles triangle with its apex pointing forwards and upwards. Each pair of converging spars is braced by a single vertical member and a pair of diagonal wires. The transverse bracing between the two pairs of struts forming the complete outrigger is constituted by the bar on which the elevator hinges.

The chassis frame is formed by two longitudinal skids attached by six struts to the main-frame of the flyer, as shown in our drawing; diagonal wires are used to complete the bracing as in other parts of the framework. The most interesting detail in the construction of the chassis is the method of mounting the wheels on the skids. They are carried by an axle which is strapped at its centre to the skid by an arrangement of rubber bands, as shown in an accompanying sketch. Radius rods diverge from the skid to opposite ends of the axle in order to prevent slewing when one wheel strikes an obstacle, but as each radius-rod is separately hinged the axle can tilt as much as is required. When the elastic spring has been stretched to its permissible limit the skid comes in contact with the ground, and takes the load direct.

Another frame member which is of particular importance, although eminently simple in the Farman flyer, is that which supports the engine and the pilot's seat. It is shown separately in an accompanying sketch, and consists in the main of two wood spars and a simple pressed steel bracket. The spars lie fore and aft across the main deck spars, to which they are clamped by U-bolts in order to avoid drilling the wood. A foot-rest, and a light seat for the pilot, are fastened direct to these spars at one end, while a pressed steel bracket for the support of the engine is attached at the other extremity. The bracket itself is of quite unusual shape, since its purpose is to provide a support for the stationary crank-shaft of the Gnome rotary engine. Its shape and position are sufficiently well illustrated by the accompanying sketch to need no further reference.



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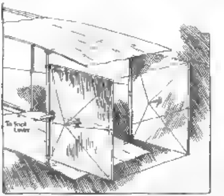
THE FARMAN FLYER.—Sketch showing how the bearers for the engine and pilot's seat are fastened to the transverse spars of the main frame by U-bolts. The inset sketch shows the universal attachment of the control-lever to the side of the foot-rest.



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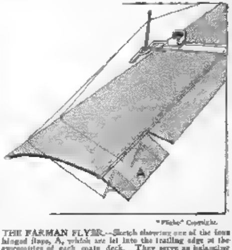
THE FARMAN FLYER.—Sketch of the tail, showing the arrangement of the double rudder and the method of bracing the rudder-planes.



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THE FARMAN FLYER.—Sketch showing one of the four hinged flaps, A, which are let into the trailing edge at the extremities of each main deck. They serve as balancing planes, and are controlled by a lever. Normally they are free to adjust themselves to the air stream lines.

Supplementary Surfaces.

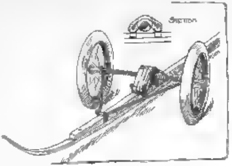
The elevator, tail rudders and balancing planes comprise the supplementary surfaces of the Farman flyer. The elevator is a monoplane constructed in three sections in order to clear the outrigger which supports it, its span being greater than the distance between the main spars of that member. The leading edge of the elevator has been made continuous throughout the span, which is 25 ft. in length. The tail is a biplane of approximately 7 ft. span. Its decks are constructed like the main decks and are similarly surfaced. The rudder is in duplicate, the two vertical planes constituting the member working in unison. They are hinged to the rear struts of the tail, and project some little distance beyond the trailing edge of that member. Their bracing, which is an interesting constructional detail, is well illustrated by an accompanying sketch. The balancing planes are the hinged portions of the main decks, to which reference has already been made. They are so mounted that they are free to adjust themselves to any natural position, and in flight would be in the air stream line.

Control.

Situated at the driver's right hand, is a universally pivoted lever to which four wires are attached. Two of these wires operate the elevator, while the other two control the balancing flaps, which form a portion of the trailing edge of the main decks, as already described. A to-and-fro motion of the lever controls the elevator, backwards movement, tilting the leading edge for ascent, and *vice versâ*.

Sideways motion of the lever works the balancing flaps, the connections being such that when the lever is moved to the pilot's right the flaps on the pilot's left are deflected downwards, thus causing that end of the deck to be raised upwards by the increased air-pressure which results from the movement. This manœuvre also increases the resistance on that side of the machine, and in order to obtain the increased lifting effect required it is essential that the velocity at which that end of the deck travels through the air should be maintained, otherwise the increased angle of incidence will not have the desired effect, but will only serve to slew the machine from its proper course. The desired path is maintained by operating the rudders, which are controlled by wires attached to a pivoted foot-rest. Pressing with the right foot sets the rudder so that the machine steers to the pilot's right, a manœuvre which would be used to counteract the slewing effect of depressing the left-hand balancing flaps.

It will be observed that the connections have been designed to accommodate as far as possible what might be expected to be the natural actions of a pilot in emergency. If the machine cants so that the extremity on the left of the pilot is depressed, the pilot would naturally try to correct this by leaning over to the right, and in so doing he would automatically move the balancing lever in that direction, and would probably



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THE FARMAN FLYER. Sketch showing how the wheels are swagged to the ski by elastic bands.

also automatically press harder upon the right hand end of the foot-rest. Both actions are those which it is intended should be performed as a means of righting the machine in the case indicated.

Engine and Propeller.

The engine at present fitted to the Farman flyer is a 7-cylinder Gnome rotary motor. A peculiarity in the arrangement of this engine is that it is situated behind the propeller. The engine itself is of the radial type, and has its cylinders and the crank-chamber constructed entirely of steel. The cylinders are air cooled, and have the exhaust valves situated in the centre of the heads. The inlet-valves are in the piston heads, the mixture being admitted through the hollow stationary crank-shaft. One of the principal problems in the development of this engine has been the balancing of the valves against the disturbing influence of centrifugal force, a difficulty which seems to have been satisfactorily surmounted, as the engine is apparently being used with success. The rotation of the cylinders affords, we are led to believe, a satisfactory solution of the air-cooling problem.

The propeller is made of wood, and has been built by Chauvière, whose workmanship invariably shows great care and high finish. The diameter is 8 ft. 6 ins., and it has two blades.

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DONCASTER FLYING WEEK

In spite of their inability to obtain official sanction of their meeting, the Doncaster Aviation Committee decided to go on with it and the flying was to have commenced yesterday, Friday. Among the flyers announced to appear are S. F. Cody, Delagrange, Schreck, Sommer, and Le Blon. The Doncaster Cup will be awarded for the aviator the sum of whose flights gives the greatest total of distance, the Great Northern Railway Cup for the greatest distance flown, the Doncaster Tradesmen Cup for the longest time in the air, the Chamber Cup for the highest speed over two circuits of the course, and other cups for height, passenger-carrying, the best cross-country journey, and the best flight by a British aviator. Cash prizes are to be given, but no definite sums have been announced, although it is stated that they will be distributed according to the results accomplished.

Aviators will be able to make their attempt for any of these prizes at any time during the week, but it will be necessary before starting for the flyer to inform the officials as to which prize he is competing for.

Among the official notices of the Aero Club of the U.K., on page 651, will be found a statement concerning the withholding of the official sanction of the meeting.

BLACKPOOL AVIATION WEEK.

OCTOBER 18TH TO 23RD.

ORGANISED BY THE BLACKPOOL CORPORATION AND THE LANCASHIRE AERO CLUB, UNDER THE RULES OF THE FEDERATION AERONAUTIQUE INTERNATIONALE (REPRESENTED BY THE AERO CLUB OF THE UNITED KINGDOM).

Perhaps the most important announcement with regard to the Blackpool meeting during the past week has been that Mr. Latham has decided to come over and fly on the Antoinette monoplane of the type on which he made his second attempt to cross the Channel and on which he did so well at Rheims. Among the other machines which are certain to be seen on the ground will be four Voisins, two Farmans and two Bleriots, in addition to which there will be several all-British machines, and in all probability Barateux will bring the Wright flyer with which he has been meeting with success at Dunkirk. It will be seen that in the persons of Henry Farman, Latham, Rougier and Paulhan the Blackpool Aviation Committee have secured the pick of the successful aviators.

The programme has now been finally drawn up and appears below. It contains seven events. Four are International, the most valuable prizes being offered in the contest for the longest distance flown. Then there are the height, passenger-carrying and speed contests. Apart from these there will be competitions for British aviators on any machines, British aviators on British machines, and for the most meritorious performance during the week from the 18th to the 24th. In addition to these actual contests, there will be the £100 *Manchester Guardian* Cup for the slowest lap with £100 in cash, the £1,000 Michelin Cup for the longest distance, the £1,000 *Daily Mail* prize for circular flight and a prize of £50 which will be awarded to the aviator who makes the greatest number of circuits, whether in practice or in actual competition.

Flying will be permitted each day from 10 a.m. to 4.30 p.m., and competitors may make as many attempts as they like, and may start when they please, but before actually starting they must give notice of their intention to one of the five Clerks of the Course, who are all officials of the Aero Club of the U.K. At each corner of the 3.3 kilom. course a mark post has been erected, where judges will be stationed, and they will communicate by telephone to the box of the official timekeepers, Messrs. A. V. Ebblewhite, C. P. Glazebrook and T. D. Dutton, the number of laps and times of those competing.

The entries for the meeting finally close at 12 a.m. this morning (Saturday). It is practically certain that Mr. A. M. Singer, who has been flying on a Voisin machine at Chalons, and Mr. A. V. Roe, with his triplane, will be seen taking part in the competitions for British aviators.

Seats at Blackpool.

In our advertisement columns will be found an announcement by the Blackpool Corporation relating to the prices of seats at the Blackpool meeting which starts on the 18th inst. It will be seen that the charge for admission will be as low as one shilling, while the cost of seats ranges up to five guineas for a season ticket for the week. All applications must be sent to the Treasurer, Town Hall, Blackpool.

PROGRAMME AND PRIZES.

Grand Prize of Blackpool for Long Distance.

First prize, £2,000. Second prize, £ [illegible]. Third prize, £200.

The above prizes will be awarded, in order, to the competitors who shall have completed the greatest number of circuits without touching the ground. This contest is subject to the following rules:—

Rule 1.—The order of starting shall be by lot; any competitor not starting within fifteen minutes of the time appointed shall lose his turn, and shall then only be allowed to start after all the other competitors have been sent off.

Rule 2.—This prize may be competed for on the following days:—Monday, Tuesday, Wednesday and Thursday, October 18th, 19th, 20th and 21st, 1909, and within the hours appointed by the Clerks of the Course.

Rule 3.—It shall be an obligation on all competitors taking part in this event to cross the starting line in flight once at least on each of the above-mentioned days during flying hours, notwithstanding their previous performances. Any competitor failing to comply with this condition will be *ipso facto* disqualified. It shall nevertheless be within the power of the Clerks of the Course to waive this condition should the competitor's machine have met with a mishap in transit or whilst taking part in any event at the meeting, which, in their opinion, shall render compliance with this condition impossible.

Rule 4.—Every aviator shall give full particulars of the machine he is using, and notify any material changes thereto, as also the nature of such changes.

Prize for Greatest Altitude.

(First, *Daily Mail* prize, £600. Second prize, £240. Third prize, £160.)

The above prizes will be awarded in order to the competitors who shall attain the greatest height on their machines. No prize will be awarded unless the minimum height of 200 ft. be attained. This prize may be competed for on the following days:—Tuesday, Thursday and Saturday, October 19th, 21st and 23rd, 1909.

Prize for Carrying Passengers.

(First prize, £400. Second prize, £100.)

These prizes will be awarded, in their order, to the competitors carrying the greatest weight on their machines over one complete circuit of the course. For purposes of this competition the weight of the pilot and his passenger or passengers will be added together, and the prizes awarded in relation to the greatest total weight carried. In the event of an equal weight being carried by two competitors the prize will be awarded to the competitor completing the course in the shorter time. It is a condition of this competition that at least one passenger of not less than 18 years of age be carried. Competitors are at liberty, however, to add any additional amount of weight they may desire in the form of dead weight, such dead weight to be reckoned in the total amount carried. This prize may be competed for on Friday and Saturday, October 22nd and 23rd, 1909.

The "Daily Sketch" Prize for Speed.

Presented by Messrs. E. Hulton and Co., Ltd.

First Prize, £400. Second Prize, £100.

These prizes will be awarded in their order to the competitors completing three circuits of the course in the shortest time. This prize may be competed for on the following days—Monday, Tuesday, Wednesday, Thursday and Friday, October 18th, 19th, 20th, 21st and 22nd, 1909.

The "Ashley" Competition for British Aviators.

First Prize, £250. Second prize, £150. Third prize, £100.

To be competed for on any type of machine (British or otherwise) to be piloted by a British subject who shall never have won a prize in open competition up to the date of this meeting; to be adjudged to the competitor who shall cover the longest distance without touching the ground. No prize shall be given unless a distance of at least 250 yds. in flight be covered by the competitor. This prize may be competed for on Wednesday, Friday and Saturday, October 20th, 22nd, and 23rd, 1909.

The "All-British" Prize

(Given by the Blackpool Tower Co.).

1st prize, £150. 2nd prize, £100.

For British aviators piloting an all-British machine, i.e., designed and built in the United Kingdom, and fitted with a British motor, to be adjudged to the competitor who shall cover the longest distance without touching the ground. No prize shall be given unless a distance of at least 100 yards in flight be covered by the competitor. In the event of any question arising in respect of the definition of an all-British machine the question shall be referred to the Committee of the Aero Club of the United Kingdom, whose decision in the matter shall be binding and without appeal. This prize may be competed for on Friday and Saturday, October 22nd and 23rd, 1909.

Prize for General Merit.

1st prize, £300. 2nd prize, £150. 3rd prize, £50.

The sum of £500 in these prizes will be awarded on the conclusion of the meeting to the competitors who in the opinion of the judges of the meeting shall have performed the most meritoriously during the meeting.

The Prize for Competitors' Assistants.

The sum of £50 will be awarded on the conclusion of the meeting, for distribution among the assistants of the competitor who shall (in competition or otherwise) have completed the greatest number of circuits of the course during the meeting. The circuits covered by competitors in the course of the Long Distance Race shall not be reckoned in connection with this prize.

Prize for the Slowest Circuit.

A cup, value £100, presented by the *Manchester Guardian*, and £100 added money, will be awarded to the competitor who shall, in competition or otherwise (but under notice to the Clerk of the Course) have covered one continuous circuit of the course in the slowest time. This prize may be competed for on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, October 18th, 19th, 20th, 21st, 22nd and 23rd, 1909.

REGULATIONS.

General Regulations.

Art. 1.—With the exception of events Nos. 5 and 6, all the events are open to competitors of any nationality, and may be competed for by any competitor duly qualified under the rules of the F.A.I.

Art. 2.—The various events on the programme are open to all types of machines heavier than air. Any machine, without distinction of power, form, method of starting or of propulsion, is admitted under these rules.

Art. 3.—Only one prize in any given event can be won by a competitor, and in the event of there being only one competitor the second and third prizes will be merged in the general prize fund.

Art. 4.—No machine taking part in any of the events of this programme may be removed from the ground before the last day of the meeting, except by special permission of the Sports Committee.

Art. 5.—All machines must display the number allotted to them by the Sports Committee, and this number, in figures not less than 2 ft. in height, will be affixed in the manner indicated to the competitor by the Clerks of the Course.

Art. 6.—The sheds for the housing of the machines will be provided free of all cost to the competitors by the Sports Committee, but the Organisers will not recognise any responsibility which such occupation may entail. Competitors are responsible for the proper guarding of the sheds allotted to them, as also for any damage caused to their machines by themselves, their servants, or third party. Their special attention is drawn to the danger of damage by fire, storm, tempest, &c.

Special Regulations.

Art. 7.—No event may be competed for except during such hours as the Red Flag may be flying from the official signal mast, and permission must in all cases be first obtained from the Clerks of the Course before starting for any of the events in the programme.

Art. 8.—No competitor will be allowed to start in any of the events until permission shall have been given him by a Clerk of the Course, whose duty it shall be to see that the official Timekeepers are duly advised of such start.

Art. 9.—All distances and all times will be reckoned from the moment the competitor crosses the starting line in flight, and it shall be the duty of the Clerks of the Course to at once put up a signal should such start not be adjudged a valid one.

Art. 10.—The course is marked out by five Mark Towers, and all competitors must pass outside such towers when taking part in any of the events of this programme. For purposes of recording the distances traversed in any event such distance shall be reckoned from the last mark tower passed, in the proper way (i.e., on the outside) by the competitor, and in all events where speed is the deciding factor the time shall only be reckoned from the passing of the starting and finishing line in flight, at least one complete circuit of the course being thus necessary, and only completed circuits being reckoned in all speed contests.

Art. 11.—Any competitor touching any part of the mark tower in the course of any event shall not be held to have passed same, and must return and pass same in the proper manner, failing which his flight shall be held to have ended at the last mark tower properly rounded.

Art. 12.—In all events machines must travel in the same direction as the hands of the clock, except under special permission of the Clerks of the Course given to the competitor in writing or recorded in the record book kept in the Timekeeper's lodge.

Art. 13.—A record book will be kept in the Timekeeper's lodge under the care of the Clerk of the Course specially designated for this purpose, and it shall be the duty of such official to record therein every properly made start by any competitor for any event of this programme throughout the week.

Art. 14.—The Clerks of the Course are empowered to affix to any machine taking part in any of the events of the programme any device they may deem advisable for the purpose of recording if the machine to which such device shall have been affixed shall have touched the ground in its journey round the course.

Art. 15.—The official flying hours are from 11 a.m. to sunset, and events may be competed for (subject to Rule 7) at any time within these hours, provided, however, that no competitor starts in any event after 4.30 p.m. It shall be within the discretion of the Stewards of the meeting to prolong these hours, but all flights shall be held to be officially concluded at the hour of sunset as recorded by the Greenwich Observatory.

Art. 16.—The Organisers decline all responsibility for any accident which may occur, owing to third party or otherwise, to any competitor, to his machine or to his passengers, or for any accident or damage which such competitor or his machine, passengers or servants may cause to third party.

Art. 17.—The responsibility for the proper conduct of the meeting, as also for the carrying out of these rules, is vested in the Clerks of the Course, to whom all protests and complaints must in the first instance be made.

Art. 18.—All competitors by the fact of starting for any of the events of this programme shall be held to have made themselves acquainted with these rules and regulations, as also those governing the various events of the meeting, and to thereby undertake to abide by the same.

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I.A.E. Winter Programme.

At the first two monthly meetings of the Institution of Automobile Engineers during the forthcoming winter session the subject dealt with is the conquest of the air. The session opened on Wednesday last, when Dr. H. S. Hele-Shaw delivered his presidential address, taking as his subject "Automobilism in the Air." On November 10th a paper on "Motors for Aerial Navigation" by J. S. Critchley will be read, together with abstracts of an historical survey of the aeroplane movement by R. W. A. Brewer, G. J. F. Knowles, and Capt. L. A. Kingston.

A British Blériot Company.

A Company is being formed in London to take over the English rights of the Blériot aeroplanes, and the prospectus will be issued almost immediately. M. Louis Blériot, the conqueror of the Channel, will be on the Board of the English Company, which will also include one or two of the directors of Blériot, Limited, the Company which has so successfully exploited the Blériot motor lamps in England.

The capital is to be about £100,000 in ordinary shares.

HOW TO GLIDE.

By WILBUR WRIGHT

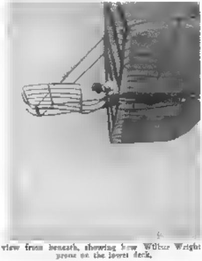
(Continued from page 622.)

Early Difficulties.

In one glide the machine rose higher and higher until it lost all headway. This was the position from which Lilienthal had always found difficulty in extricating himself, his machine then developing, in spite of his greatest exertions, a tendency to dive downward almost vertically, and strike the ground head on with frightful velocity.

In this case a warning cry from the ground caused the pilot to turn the elevator to its full extent and also to move his body slightly forward. The machine then settled slowly to the ground, maintaining its horizontal position almost perfectly, and landing without any injury at all.

This was very encouraging, as it showed that one of the greatest dangers of machines with horizontal tails had been overcome by the use of the front elevator.



A view from beneath, showing how Wilbur Wright lay prone on the lower deck.

Several glides later the same experience was repeated with the same result. In the latter case, the machine had even commenced to move backward, but was, nevertheless brought safely to the ground in a horizontal position.

On the whole, this day's experiments were encouraging, for while the action of the elevator did not seem at all like that of our 1900 model, yet we had escaped without difficulty from positions which had proved very dangerous to preceding experimenters, and after less than one minute's actual practice had made a glide of more than 300 feet at an angle of descent of 10° and with a machine nearly twice as large as had previously been considered safe.

On the Road to Discovery.

The trouble with its control which has been mentioned, we believed, could be corrected when we should have located its cause.

Several possible explanations occurred to us, but we finally concluded that the trouble was due to a reversal in the direction of the travel of the centre of pressure at small angles.

In deeply-curved surfaces the centre of pressure at 90° is near the centre of the surface, but moves forward as the angle becomes less till a certain point is reached varying with the depth of curvature. After this point is passed the centre of pressure instead of continuing to move forward with the decreasing angle, turns and moves rapidly towards the rear. The phenomena are due to the fact that at small angles the wind strikes the forward part of the surface on the upper side instead of the lower, and thus this part altogether ceases to lift, instead of being the most effective part of all as in the case of the plane.

Lilienthal had called attention to the danger of using surfaces with a camber as great as one-eighth of the chord, on account of this action on the upper side, but he seems never to have investigated the camber and angle at which the phenomena entirely cease. My brother and I had never made any original investigation of the matter but assumed that a camber of one-twelfth of the chord would be safe, as this was the camber on which Lilienthal based his tables. However to be on the safe side, instead of using the arc of a circle we had made the camber of our machine very abrupt at the front so as to expose the least possible area to this downward pressure.

While the machine was building Messrs. Huffaker and Spratt had suggested that we should find this reversal of the centre of pressure, but we believed it sufficiently guarded against. Accordingly we were not at first disposed to believe that this reversal actually existed in our machine, although it offered a perfect explanation of the action we had noticed in gliding.

Our peculiar system of control by means of an elevator instead of a tail was based on the assumption that the centre of pressure would continue to move further and further forward, as the angle of incidence became less, and it will be readily perceived that it would make quite a difference if the front surface, instead of counteracting this assumed forward travel, should in reality be expediting an actual forward movement.

The Discovery.

For several days we were in a state of indecision, but were finally convinced by observing the following phenomena :—

(Fig. 1.) We had removed the upper surface from the machine and were flying it in a wind as a kite to see at what angles it would be supported in winds of different strengths. We noticed that in light winds it adopted the attitude shown in the upper diagram and exerted a strong pull on the cord C. As the wind became stronger the angle of incidence became less, and the surface flew in the attitude shown by the middle diagram in which position it exerted a slight horizontal pull on the cord C. But when the wind became still stronger it took up the attitude shown by the lower diagram and in that position exerted a strong downward pull on the cord, C.

It at once occurred to me that here was the answer to our problem, for it is evident that in the first case the centre of pressure was in front of the centre of gravity and thus pushed up the front edge; that in the second case the centre of pressure coincided with the centre of gravity, so that the surface was in equilibrium; while in the third case the centre of pressure had reached a point even behind the centre of gravity and there was therefore a downward pull on the cord.

FIG 1

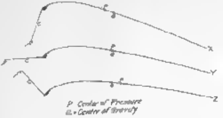
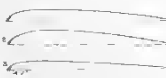


FIG 2



Diagrams illustrating Wilbur Wright's experimental proof of the retrogression of the centre of pressure on a cambered aerofoil after the critical angle of incidence is reached. The lower diagram (Fig. 2) shows the change made in the sectional camber as the result of the above discovery

Its Result.

This point having been definitely settled we proceeded to truss down the ribs of the whole machine, so as to reduce the camber. In Fig. 2 diagram 1 shows the original curvature, diagram 2 the curvature when supporting the pilot's weight, and diagram 3 the curvature after trussing.

On resuming our gliding we found that the old conditions of the preceding year had returned, and after a few trials made a glide of 336 ft., and soon after one of 389 ft. The machine with its new curvature never failed to respond promptly to even small movements of the elevator. The pilot could cause it to almost skim the ground, following the undulations of its surface, or he could cause it to sail out almost on a level with the starting point, and, passing high above the foot of the hill, gradually settle down to the ground.

The wind on this day was blowing from 11 to 14 m.p.h. The next day, the conditions being still favourable, the machine was again taken out for trial. This time the velocity of the wind was from 18 to 22 m.p.h.

At first we felt some doubt as to the safety of attempting flight in so strong a wind, with a machine of over 300 sq. ft., and a practice of less than 5 minutes spent in actual flight, but after several preliminary experiments we decided to try a glide. Control of the machine seemed so good that we then felt no apprehension in sailing boldly forth, and thereafter we made glide after glide, sometimes following the ground closely, and sometimes sailing high into the air.

We made glides on subsequent days whenever the conditions were favourable. The highest wind thus experimented in was nearly 27 miles per hour.

Air Proof Fabrics.

It had been our intention when building the machine to do the larger part of the experimenting in the following manner:

When the wind blew 27 miles an hour or more, we would attach a rope to the machine and let it rise as a kite with the operator upon it. When it should reach a proper height the operator would cast off the rope and glide down to the ground, just as from the top of a hill.

In this way we would be saved the trouble of carrying the machine up hill after each glide, and could make at least ten glides in the time required for one in the other way. But when we came to try it we found that a wind of 27 miles, as measured by Richard's anemometer, instead of sustaining the machine with its operator, a total weight of 240 lbs., at an angle of incidence of 3°, in reality would not sustain the machine alone—100 lbs.—at this angle. Its lifting capacity seemed scarcely one-third of the calculated amount. In order to make sure that this was not due to the porosity of the cloth, we constructed two small experimental surfaces of equal size, one of which was air proof and the other left in its natural state, but we could detect no difference in their lifting powers.

More Discrepancies.

For a time we were led to suspect that the lift of curved surfaces little exceeded that of planes of the same size, but further investigation and experiment led to the opinion that—

(1) The anemometer used by us over-recorded the true velocity of the wind by nearly 15 per cent.

(2) That the well-known Smeaton co-efficient of ·005 V^2 for the wind pressure at 90° is probably too great by at least 20 per cent.;

(3) That Lilienthal's estimate that the pressure on a curved surface having an angle of incidence of 3° equals ·545 of the pressure at 90° is too large, being nearly 50 per cent. greater than very recent experiments of our own with a special pressure testing machine indicate.

(4) That the superposition of the surfaces somewhat reduced the lift per square foot, as compared with a single surface of equal area.

In gliding experiments, however, the amount of lift is of less relative importance than the ratio of lift to drift, as this alone decides the angle of gliding descent. In a plane the pressure is always perpendicular to the surface and the ratio of lift to drift is therefore the same as that of the cosine to the sine of the angle of incidence. But in curved surfaces a very remarkable situation is found. The pressure, instead of being uniformly normal to the chord of the arc, is usually inclined considerably in front of the perpendicular. The result is that the lift is greater and the drift less than if the pressure were normal.

(*To be continued.*)

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Another Entrant for the £10,000 Prize.

ANOTHER formal entry for the *Daily Mail* prize of £10,000 for a flight from London to Manchester was made last week on behalf of Mr. L. D. L. Gibbs, who purposes to make the attempt on Lieut. Dunne's aeroplane which is now being fitted with a British engine.

FLYER SILHOUETTES.

SKETCHES AND NOTES ABOUT THE MACHINES AT PARIS.

Much of that which is interesting in the flyers at the Paris Aero Salon is already known to our readers, for of the more successful machines we have already published particulars. Blériot's monoplane No. XI, of cross-Channel fame, has been included in our series of special descriptive articles, as too have the Santos Dumont and Voisin aeroplanes. The principles involved in the Wright design have already been discussed at some length in a recent article on the glider, and will be enlarged upon in a subsequent description which we are about to give of the flyer itself. In the present issue we similarly deal with the Farman machine, and if with these leading makes we include the R.E.P. and Antoinette monoplanes, to which we shall turn our attention immediately, it will be seen that the bulk of the display at the Grand Palais has already passed beyond the necessity of such summarised descriptive reference as it is our purpose to devote to a certain number of devices which have not yet attained to marked pre-eminence in the practical world of flight.

In the following notes we deal with each machine separately as being more convenient for reference, and we have further confined our attention more to the peculiarities in its design than to its general construction, in the belief that until particular machines become notable for their exploits in the air our readers will regard these details as the main points of interest:—

Commerce and Progress.

In the details they have [illegible] much of the work from the designation of commonplace, a term which the more casual observer might be inclined to apply after seeing so many similar types at the Grand Palais. Even so soon as this a wave of standardisation has apparently surged over the budding industry, for at the moment there are but two types—the monoplane and the biplane—which are at all to the fore. There is, after all, a great deal of commercial common sense in this. Biplanes and monoplanes have alone been successful on the flying ground, and the newcomers on the industrial side of the movement have a splendid opportunity to obtain a firm footing by assisting to meet the demand for a recognised type of machine. Developments must follow in due course, and they are likely to be all the more satisfactory if they already have a certain commercial aspect to give them an impetus.

Constructors who mean to stay in the field are not likely to be conservative about new ideas, but they are wise to get a material reward for any type which has proved reasonably successful. Voisins, the pioneers of the French school of biplane design, are experimenting with a new type which they preferred not to exhibit at the Salon, while Blériot is interesting himself with his No. 12 after his famous cross-Channel flight has set the seal of success on the No. 11, which, like the standard Voisin machines, are now being turned out in large numbers. Thus we have progress and commerce going hand in hand, as they should, and out of the good work which is being done it is to be hoped that a great industry may be built up worthy of the country in which it exists.

Growing Popularity of the Monoplane.

Before immediately passing to the brief descriptions of individual flyers, we would make a few remarks upon the machines collectively, and draw attention to one or two points which impress the mind after it has become familiar with the exhibition as a whole. It is impossible, for instance, not to be struck by the fact that the majority of newcomers favour the monoplane rather than the biplane as a type on which to devote their energies and skill. Whether this is due merely to a personal preference for the undoubted simplicity in the appearance of a well-built monoplane, or whether, on the other hand, it has its foundation in more subtle reasons, it is, of course, impossible to say; the fact remains that the monoplane is receiving an ever increasing attention, and ought to make rapid progress. As a problem in construction it is deceptive, for that graceful and compact appearance which is so much admired by the spectator of a monoplane in flight is not attained without skilful design, and in some cases there is an elaborateness of detail which might be altogether overlooked on casual inspection. Take the Antoinette flyer as an example: the construction of its wings has been made a special study, and the result is a supporting member quite unlike anything else we have seen in aeroplane work. The manner in which the wings warp, considered solely as a piece of smooth-acting mechanism, is a matter thoroughly deserving of admiration. The Santos Dumont monoplane again is a piece of work which is quite remarkably interesting from start to finish. It has nothing whatever of the refined elegance of the Antoinette, but its design and construction are both indisputably clever, and we imagine there will be many copies of it ere long. Its popularity, however, must depend largely on the skill required to handle such a small machine in the air.

Among the biplanes the Wright and the Voisin types are still pre-eminent. But one constructor at least, M. Fernandez, has realised the possibilities of a machine built on similar lines to the American Curtiss, although we can hardly go so far as to say that the copy is equal to the original in excellence of construction. Messrs. Clement Bayard, who built a monoplane for the exhibition which was held in Paris last December, have now gone over to the biplane principle.

Uncommon Types of Flyers.

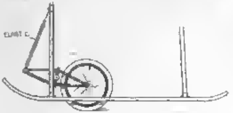
Of machines which stand quite apart from either the monoplane or the biplane class there are practically only three at the Paris Show, and one of these is the Vuitton Huber helicopter, of which our readers have already heard. Of another—the so-called "Dix [illegible]," constructed by Messrs. De Dion—mention has already been made in FLIGHT: it is an aeroplane pure and simple, but embodies an original system of control, to which reference is made elsewhere. The third machine to which we refer is the [illegible] [illegible], a device of the direct lifting type which will have to prove itself successful to some degree before it can be taken very seriously. The problem of raising the machine off the ground by deflecting a horizontal draught downwards belongs, like the problem of the helicopter, more to the realm of detail than to the field of fundamental principles. Unquestionably a lifting effect is produced in both cases, but the difficulty lies in developing a sufficient lifting force in such an economical manner as to make the application of the principle practicable for ordinary purposes.

The Helicopter Problem.

That a machine which could rise into the air vertically from the spot on which it is standing would be a tremendous advantage for certain purposes no one who has watched the difficulties of ascent with aeroplanes which run along the ground can doubt. Desirable as this quality is, however, it is not at the moment a fundamental necessity, and for our own part we strongly favour the practice of flight with present-day successful machines, in the belief that a surer and quicker progress is more likely to result from the actual familiarity with the air which the practice must confer than can be expected from the more or less theoretical study of a problem which is commonly beset with great difficulties. It has always seemed to us that the builder of a helicopter capable of the feats of ascent which we have commonly found attributed to such designs on paper would but find himself on the threshold of the problem of aero-dynamic transport at the very moment that he had apparently achieved the success he desired by quitting *terra firma*. It is of course good to see a few people working on these special problems, but at the moment, as we have said, we think it even better to find most of the newcomers anxious to start off by obtaining an actual mastery of the air with one or other of the accepted types of machine. A little real experience must surely be of wonderful value to them afterwards, when their very natural desire to be original leads them to diverge along independent lines of their own.

Chassis Design.

There is, moreover, much scope for originality in the design of flying machines of the orthodox monoplane or biplane types. The chassis, for example, is an instance of a member which repays careful thought, and we would especially draw our readers' attention to this part of the construction when they are looking at the photographs of the different machines. We give this week a couple of photographs, and these will be followed in subsequent issues by views of the rest of the leading machines on exhibition at the Salon. The combination of wheels and skis, introduced on the Farman flyer, is undoubtedly popular and seems to be a very good solution of a particular difficulty which has to be overcome. Wheels are necessary for running along the ground when starting but skis are better suited to withstand the shock of landing. In those designs which combine both members the wheels are mounted so that they are normally some six or eight inches below the level of the runners. They are suspended in such a manner as to be capable of taking the dead weight of the machine, but on sudden impact with the ground the wheels rise and the runners take the load, thus preventing damage to the wheel-mounting which is otherwise liable to take place. Even on a so-called smooth flying ground a chassis wheel gets quite an amount of bumping about; in fact it is rather remarkable that more accidents have not happened with this member.



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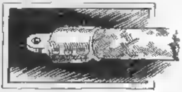
PARIS FLIGHT SHOW.—Sketch illustrating the use of wheels in conjunction with ski for the chassis of an aeroplane.

Elastic Springs.

The suspension at present employed almost invariably includes the use of elastic springs. These springs are built up out of innumerable fine strands of elastic until they form a cable which averages from an inch to an inch and a quarter in diameter, according to the load. The cable is covered with a woven cotton fabric and is fitted with a clamp at each end so that it can conveniently be attached to its anchorages. The price which the accessory dealers are asking for these elastic springs suggests a very keen eye to the main chance in spite of the present cost of rubber; for a single "spring" about 14 ins. in length 35 frs. was demanded.



Flight Copyright.

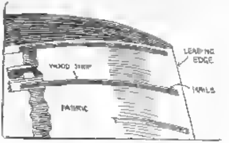
PARIS FLIGHT SHOW.—Portion of an elastic spring, showing the brass ferrule which is clamped to its extremity to provide a means of attachment to the machine.

Timber and Steel.

Turning to the materials used for the construction of aeroplanes, timber is unquestionably still more popular than steel, although there are not wanting prominent designers like M. Esnault-Pelterie who use steelwork very largely in their machines. Spruce for spars and other fairly bulky members, and ash for the lighter pieces, especially those which are curved, are the most common woods employed. Tubular steelwork for the chassis is, of course, frequently to be seen.

Deck Surfaces.

The surfacing of the decks or wings is in most cases carried out with rubber proofed fabric, although in a few instances fine unproofed canvas is considered adequate. From the many letters we have received on the subject we are led to suppose that the method of fastening the surface material to the skeleton framework of the deck presents points of special difficulty to our readers, but in reality there is not a great deal in this matter which calls for special comment as the result of an examination of the actual machines. Sometimes the fabric is hardly fastened down at all; at others it is stuck down with cement or tacked down with nails to occasional ribs. A precaution which some builders take in the latter case is to place a thin strip of wood outside the fabric to prevent the nail heads from tearing through. The method adopted by Santos Dumont of sewing the upper and lower surfaces together between the ribs is interesting and uncommon. Many firms are using strip of aluminium bent into C section for the leading edges of the decks, as it is light, and gives a smooth continuous front. A method of finishing off the trailing edge, which is at once effective and neat, is to run a steel wire through a pocket which can be conveniently made by turning back the fabric. Tensions in the cloth expose the wires at intervals coinciding with ribs of the framework, over the ends of which it can



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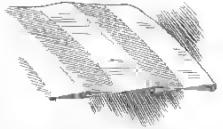
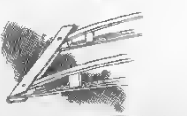
PARIS FLIGHT SHOW.—Sketch illustrating how the surface fabric may be protected from the nails which secure it to the rib by the use of rib laths. The above sketch illustrates a portion of a wing tip seen from beneath.



Flight Copyright.

PARIS FLIGHT SHOW.—Sketch illustrating Santos Dumont's method of fastening the fabric by sewing the upper and lower surfaces together between the ribs.

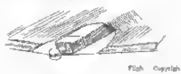


Flight Copyright.

PARIS FLIGHT SHOW.—Sketch illustrating the use of sheet aluminium for the leading edge of the main decks.

be stretched. In one or two instances we have seen the wire on the trailing edge looped over the shank of an ordinary wood-screw, and it seems to us that fitting the screw in another position as an extension of the rib would afford a very simple means of adjusting the tension on the wire should any such adjustment be found necessary.

The wire itself would of course lie in the notch which is cut across the head of the screw, and would be temporarily disengaged while an adjustment was being made.



Flight Copyright

PARIS FLIGHT SHOW.—Sketch illustrating a suggested method of using a screw for stretching the wire to the trailing edge.

Portability of Flyers.

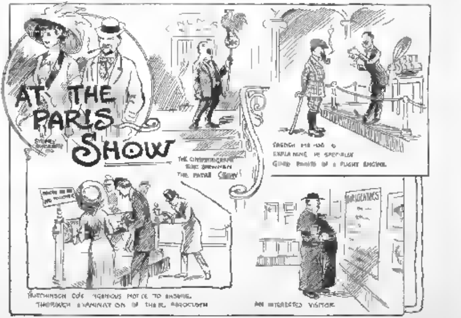
From the purchaser's point of view there are some features about flying machine construction which potentially strike the would-be owner to the exclusion of all else. Some intending buyers will walk round the show and be struck by the apparent impossibility of transporting such an apparatus as an aeroplane from one spot to another—except of course under its own power. Certainly there is no very special evidence that manufacturers are studying this point as a prime factor in design, although one or two, Blériot especially, look to the detachability of the wings. As a matter of fact we are inclined to place considerable importance on this matter, and should be pleased to see the ingenuity of designers directed towards the evolution of simple and strong fastenings for this sort of work. Even though it may be out of the question, just at present, to have a machine so readily dismantled that it can be taken to pieces every night for accommodation in a small shed, the possibility of transferring one's scene of operations from one flying ground to another without incurring an exorbitant freightage for one's machine will certainly appeal to a large majority of those who are inclined to devote some of their leisure to the practice of flight.

Propellers in the Line of Sight.

Another point which we have noticed as having struck the prospective purchaser very strongly is the relative position of the propeller and the pilot's seat. Most monoplanes have a single tractor screw placed just in front of the frame, and its rotation, more or less in the line of sight, suggests unpleasantness to many who otherwise are inclined to favour the monoplane type of machine. The Blériot No. 12 is especially an example which conveys an impression that the propeller might prove to be somewhat in the way. We are assured that it in no way interferes with the pilot's outlook, and doubtless its presence is easily got used to. At any rate the seating arrangements on Blériot No. 12, which is the only two-seated monoplane yet built primarily as a two-seater, indicate an originality of design deserving of much commendation. The progress of this model will be watched with the same interest as were the performances of the famous "short-span" No. 11, which culminated in the cross-Channel flight. We trust that they may lead equally soon to pronounced success.

The One-Man Machine.

Taking the machines collectively, they represent a large type of flyer, and there is no particular evidence of any special attention being given at the moment to the small one-man machine, which, as we have frequently remarked, ought to have a great vogue, especially among beginners. The Santos Dumont "Demoiselle" is, of course, a notable exception, but interesting as the construction undoubtedly is, and remarkable as have been its performances, it nevertheless is essentially sketchy in its design, and in the matter of seating capacity even the pilot can hardly be said to be accommodated. The Fernandez, being more or less of a copy of the Curtiss flyer, is a lighter and smaller machine than most. The absence of light, small engines has of course militated against the production of such a type, but there is more evidence now of this deficiency being supplied. At present engine manufacturers are asking very high prices for their aviation motors, and this in itself is hardly encouraging to the commercial production of a machine which purchasers would naturally expect to find less costly than those constructed to carry two or three passengers.


AT THE PARIS SHOW
THE PATHÉ CROW!
FRENCH METHOD OF EXPLAINING THE SPECIAL GOOD POINTS OF A FLIGHT ENGINE.
HUTCHINSON CO'S INGENIOUS MOTTO TO ENSURE THOROUGH EXAMINATION OF THEIR AEROCLOTH
AN INTERESTED VISITOR.

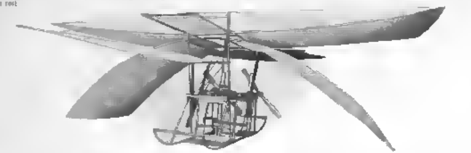
The lighter-than-air side of Flight.

AEROPLANES AT THE PARIS SALON (FIRST INSTALMENT)

lane-Salmson.

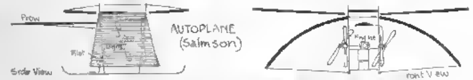
Machine which the inventors define as an "autoplane." It is tally unlike any device which has yet flown and is principally teresting on account of the [illegible] embodies for making the machine lf lifting, that is to say capable of rising off the ground vertically om rest.

Propellers for giving longitudinal motion have their shafts bevel driven from the transverse-shafts of the other screws, and so are always in action. Behind the main horizontal wings are two planes, side by side, which can be deflected into the draught from the two



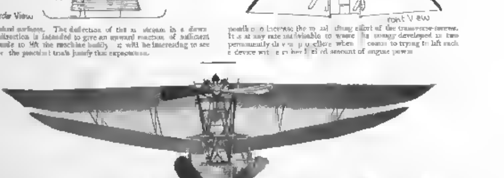
Salmson "Autoplane" at Paris Flight Show

For this purpose a pair of arched wings are used beneath the ain wings, which are horizontal, and a pair of propellers are rranged to blow air laterally from the centre of the machine on to propellers. It is intended to try and steer the machine by the reactions thus set up, and it is anticipated that by deflecting both surfaces simultaneously and then screening both propellers it will be



he arched surfaces. The deflection of the air stream in a downward direction is intended to give an upward reaction of sufficient agnitude to lift the machine bodily. It will be interesting to see hether the practical trials justify this expectation.

possible to increase the initial lifting effort of the transverse-screws. It is at any rate inadvisable to waste the energy developed in two permanently driven propellers when it comes to trying to lift such a device with a limited amount of engine power.

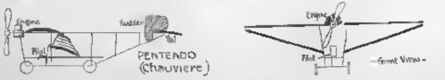


Penteado Machine at Paris Flight Show

Penteado (Chauviere).

Modified form of biplane so constructed that the two decks converge at the extremities. They are further so arranged that at the junction it is the trailing edge of the upper deck which connects with the leading edge of the lower deck, that is to say, the upper deck, instead of being directly over the lower deck, is a full chord in advance. The purpose served by this arrangement is not clear. In the centre there is a gap approximately equal to the chord, but towards the extremities it seems as if considerable interference would occur since the decks become more and more in tandem, and there is no evidence of any difference in the angle of incidence of the lower deck which would afford a compensating factor. It can hardly be said either that the system simplifies the construction to any appreciable extent, as might be supposed would be one of the objects in connecting the two decks in this way.

Provision is made for warping the lower deck. At the rear is a tail comprising a rudder and an elevator. The engine, a 3-cyl. R.E.P., is in front and drives a tractor screw.



AERO CLUB OF THE UNITED KINGDOM.

OFFICIAL NOTICES TO MEMBERS.

Fixtures for 1909.

September 25–October 17	International Aeronautical Exhibition, Paris.
October 18th–23rd	Blackpool Aviation Week.

Committee Meeting.

A meeting of the Committee was held on Tuesday, the 12th inst., when there were present: Mr. Roger W. Wallace, K.C., in the chair; Vice-Admiral Sir Charles Campbell, K.C.M.G., C.B., D.S.O., Col. J. E. Capper, C.B., R.E., Mr. Martin Dale, Professor A. K. Huntington, Mr. F. K. McClean, Mr. J. T. C. Moore-Brabazon, Mr. C. F. Pollock, Hon. C. S. Rolls, Mr. Stanley Spooner, H. E. Perrin (Secretary).

New Members.—The following new Members were elected:—

C. H. Allenson.
A. de Mowbray Bellairs.
Percy Brady.
Alfred Batt.
J. E. Castle.
Harold W. Cozens.
Dr. George Calmy.
John J. Cunninghame.
E. Guy de Mattos.
Mrs. A. Duckham.
Maj. F. K. Farr.
Maurice Fitz-Gerald.
Admiral M. D. Carnes.
Capt. W. Garrard.
Mrs. F. A. Halford.
J. S. Henry.
H. A. Hetherington.
Ernest Hausen.
Sir Charles Huntington, Bart.
W. H. Johnson.
George H. Kirkpatrick.
Mrs. Ada M. Krabbé.
C. F. Krabbe.
Capt. M. J. Lagos.
Philip Lisle.
Douglas McBean.
Mrs. V. McBean.
Capt. Cecil J. Newton.
Basil Halcro Nicolson.
Frank Noel.
J. H. Snoke.
H. Lancelot Seale.
Frank Shorland.
A. W. Tate.
William Tayleur.
Tom Thornycroft.
W. A. Tuer.
Cyril E. Tubbs.
Laurence E. Turner.
Herbert Haynes Twining.
Sam Twining.
Claude E. Wilbraham.

Doncaster Aviation Meeting.

The representatives of the Doncaster Aviation Committee attended the meeting of the Committee of the Aero Club on Tuesday, October 12th, 1909, and put forward their arguments in favour of the Committee reconsidering the decision arrived at on the previous Wednesday. After again fully considering the position the Committee of the Aero Club came unanimously to the conclusion that they could not alter their former decision, and consequently the Doncaster Meeting will not receive the sanction of the Aero Club and cannot hold their competitions under the regulations of the International Aeronautical Federation. Before this decision was arrived at the Doncaster Aviation Committee stated that they could not see their way to hold the meeting on a non-competitive basis or to choose a more suitable date. The Doncaster Committee has already published in their advertisements that the meeting is held under the regulations of the International Aeronautical Federation and the Aero Club of Great Britain. This statement is not in accordance with the facts, and is calculated to mislead intending competitors and the public. The effect of the decision of the Aero Club is to render any aviator competing at Doncaster liable to disqualification as he is unable to compete in meetings in this country and abroad held under the Federation rules.

Association of Aero Clubs.

At the invitation of the Aero Club of the United Kingdom representatives from the following provincial clubs, viz.: Portsmouth Aero Club, Yorkshire Aero Club, Blackpool and Fylde Aero Club, Liverpool Aviation Society, and Northamptonshire Aero Club, attended a meeting of the Committee of the Aero Club on Friday last, October 8th, and a Scheme of Association was drawn up and provisionally agreed on, subject to ratification by the respective clubs. A representative from the Scottish Aeronautical Society also attended and expressed his views as to the grouping of the Scottish clubs. Letters regretting inability to attend were received from the Midland Aero Club, Shropshire Aero Club, Leicestershire Aero Club, Newcastle Aero Club, and Lancashire Aero Club.

The following is the Scheme of Association:—

SCHEME OF ASSOCIATION.

1. The Associated Club shall be recognised as a branch of the Aero Club of the United Kingdom, and shall be authorised to be so designated.

2. All members of the Associated Club shall become, *ipso facto* "Associates" of the Aero Club of the United Kingdom.

3. Each Associated Club shall be entitled to representation on the General Committee of the Aero Club of the United Kingdom—which at present consists of the committee of the Aero Club (fixed by the rules at 18)—on the following basis:—One representative in respect of the first 100 members, and after that number has been reached one additional representative for each subsequent 100 or part of 100. The Associated Club may vary its representative or representatives on the general committee from time to time, provided due notice of such variation shall be forthwith given to the Committee.

4. The General Committee shall consider all matters of general policy regarding aviation, or which may require concerted action in the United Kingdom, and Parliamentary and Local Government proceedings affecting aviation generally.

5. The General Committee shall elect the Delegates to the International Aeronautical Federation.

6. The Aero Club of the United Kingdom and each Associated Club shall pay into a separate fund to be controlled by the General Committee a capitation fee of 2s. 6d. per annum in respect of each of its members other than honorary members. The said capitation fees shall become due on the first day of January in each year, and shall be calculated on the total number of members on the books of the Club at that date, provided always that the minimum amount payable by the Associated Club shall not be less than £6 5s. In the case of additional members who shall join the Aero Club of the United Kingdom or an Associated Club between the 1st day of January and the 30th June following the capitation fee of 2s. 6d. shall become payable, and in the case of additional members joining between the 30th June and the 31st December one-half of the capitation fee shall become payable in respect of that year.

7. The Associated Club shall act in all matters affecting aviation generally through the General Committee, and shall at all times and to the best of its powers give effect to all recommendations made by the General Committee in respect of any such matters.

8. The Associated Club agrees not to associate or affiliate with any other organisation whose objects are similar to those of the Aero Club of the United Kingdom.

9. The Chairman of the General Committee shall be the Chairman of the Aero Club of the United Kingdom for the time being.

10. This Agreement shall remain in force until determination by either party hereto by six months' previous notice, in writing, to expire on the 31st day of December in any year.

SCHEDULE.

1. Representation on the General Committee.

2. Participation in the election of the delegates to the International Aeronautical Federation.

3. The right to enter on the same terms as members of the Aero Club of the United Kingdom for all such open competitions organised by the Aero Club of the United Kingdom within the United Kingdom and elsewhere as come within the scope of the Aero Club of the United Kingdom to arrange.

4. *Official Organ.* A copy of the official organ FLIGHT sent post free weekly under a special arrangement.

5. *Year-Book.*—A copy of the year-book to each member.

6. *Membership Badge.*

Blackpool Aviation Week.

The Blackpool Aviation Meeting commences on Monday, the 18th inst., and continues throughout the week. *Members of the Aero Club will be admitted free to the Enclosure on production of their membership cards.*

Seats in the Grand Stand may be booked at £3 3s. to £5 5s. for the whole week. Applications for these seats must be made direct to the Aviation Committee, Town Hall, Blackpool.

The London and North-Western Railway propose to run special excursions, leaving Euston on Sunday midnight, the 17th inst., for three or six days; Tuesday, the 19th inst., for one or four days; and Friday, the same time, for one day. Full particulars can be obtained at the railway stations.

Full particulars as to the hotel and other accommodation may be obtained from the Secretary, Aviation Committee, Town Hall, Blackpool. Several announcements offering accommodation direct appear in the advertisement pages of FLIGHT, to which refer.

A special train (ordinary fares) will leave Euston on Sunday, October 17th, 1909, at 1.45 p.m., arriving at Blackpool 6.25. Luncheon car will be attached to the train. Members desiring to reserve seats are requested to communicate with the Stationmaster, Euston.

HAROLD E. PERRIN, Secretary.

The Aero Club of the United Kingdom,
166, Piccadilly, W.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

(Note.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary.)

Coventry Aeronautical Society (48 and 49, Hertford Street).

At a meeting on the 7th inst., held at the King's Head Hotel, this Society was formally inaugurated, rules adopted, and officers elected. Mr. P. V. Vernon presided and he was supported by a large number of gentlemen actively interested in the new science. The Chairman pointed out the great importance of having such a Society in Coventry, which had always been to the front in introducing new industries. If the new industry in connection with aviation was to take any strong position in this country, they wanted Coventry to be its centre. Already a beginning had been made by the Humber Co., and they hoped this might be only a small thing as compared with what it would be in the future.

The rules include the following: The subscription shall be £1 1s. for ordinary members, but the committee shall have power to elect members at a subscription of 10s. 6d. Such members must be either graduates or students in such technical or scientific institutions as the committee may from time to time decide or approve. The Chairman explained that it was realised that there might be many people in Coventry who were interested in aviation—working men and students—who could not afford the guinea entrance fee, and on that account the proposal had been put forward to include student members and artisans at half the ordinary subscription.

Mr. E. B. Walford, who has worked so hard for the movement, was appointed secretary, and Mr. W. R. Shepherd treasurer. The election of a president was deferred, as several well-known local gentlemen have been approached, but it was announced that Messrs. F. W. Lanchester, A. Herbert, O. Harmer, W. I. Iliffe, J. V. Pugh, W. Phillips, W. H. Herbert, W. Stoner, E. French, H. Baker, T. Bury, — Jesson, and H. G. Burford, had consented to act as vice-presidents.

Those interested in aeronautics wishing to join the Society as founder members may do so if their names are submitted during the next few days. The number joining at the meeting was nearly thirty.

Liverpool Aviation Society (6, Exchange Street West).

A competition and exhibition of models and parts thereof will be held at the Society's Aerodrome, Woolton, on the 30th inst., at 2.30, events to commence at 3 p.m. Classes will be provided for models under 3 ft. span and over 3 ft. span, models propelled by clockwork and models propelled by elastic and other power, classes for monoplane, biplane or any other description of plane, classes for "bought" models, and classes for "made" models. There will also be an event, first, second and third prizes consisting of the Society's gold and silver medals, for the winners of the various events preceding the final event. A class for balloons and dirigibles will also be provided. The prizes will be for each event, 1st and 2nd only, and will consist of the entrance fees to each class being divided into thirds, the winner to receive two-thirds, the second prize winner to receive one-third. Height and stability will be taken into account in adjudging the best flight. All distances are to be measured from the starter's spot to the place where model lands, as the crow flies. Admission to the ground will be free. All entries should be sent in not later than the 28th inst., stating whether monoplane, biplane, multiplane, helicopter, orthopter, balloon or dirigible, or in the event of a section of a machine being shown, the part intended to be exhibited. The entrance fees will be, for models under 3 ft. span, from 1d. up to 1s., 6d. per model; models 3 ft. and over 3 ft. span, 1s. per model. Competitions are open to general public also.

Any member not having room to construct his models at home is requested to communicate with Mr. Follows, of 19, Camden Street, who has accommodation of a limited nature to provide, free to members.

Midland Aero Club (The Bungalow, Stechford, Birmingham).

There was a crowded attendance at the general meeting of this club held on Wednesday last at the Grand Hotel, Birmingham. Capt. J. H. Cook presided, and was supported by the Mayor of Sutton Coldfield, Col. Massy, Lieut. Lempriere, and many other well-known gentlemen, while messages of regret for absence were read from Sir Gerard Muntz, Sir Benjamin Stone, M.P., Sir Henry Newman, M.P., and others.

The Chairman, after welcoming those present, said that the question of affiliation had engaged the attention of the Council, but for the present they had decided to defer taking any active steps until some scheme of a national character had been formulated. With regard to other Aero Clubs in Birmingham, he said they watched the foundation and growth of these smaller units that were devoted to the same scientific aims with much sympathy and interest. They had, however, grave doubts whether the multiplication of societies having similar objects in the same area was desirable or beneficial, as it led to waste of energy and talent.

A valuable acquisition to the club's resources was a balloon section, with the use of two balloons, which had been placed at their disposal by Lieut. Lempriere. The council had also under consideration the question of providing a suitable club room with a reference library. The meeting decided that the necessary steps should be taken to form the club into a limited liability company, so as to limit the liability of members. This was considered a wise policy in view of the proposal to hold an aviation meeting in Sutton Park next Easter. After the business meeting was over papers were read by Mr. A. P. Maxfield, on "The Building of an Aeroplane," Mr. Ivy Rogers, on "Impressions of a Flight with Mr. Cody," and Mr. Granville E. Bradshaw also dealt with the building of a flyer.

S.W. England Aeronautical Soc. (51, St. Leonard's Rd., E. Sheen).

A committee meeting was held on Tuesday last, the 12th instant, at the Hammersmith Model and Electrical Works, when it was decided that the premises in Down Place, Hammersmith, were to be occupied on Monday, the 18th instant, and a model demonstration held in Bishop's Park, Fulham, on the 24th instant. The delegates for the International Conference are Mr. A. J. F. anello, the secretary, and Mr. F. E. H. Johnson, a member of the committee.

A general meeting, at 7 o'clock, will follow the model demonstration on the 24th inst. All interested should communicate with the secretary.

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KITE FLYING AT WIMBLEDON.

Two very interesting competitions were carried out on Wimbledon Common by the Kite Flying Association on Saturday last. The most important was the competition for the best suggested use to which a kite can be applied. Seven entries were received, and they would have included demonstrations of the Cody man-lifting kites, but the War Office refused permission for them to be used. This was, perhaps, a pity, as it would have given the general public an opportunity of actually seeing what could be done with these appliances. After each competitor had demonstrated his suggestion, the Judges, Messrs. R. M. Balston, W. Sorult, C. Brogden, E. M. [illegible]illman, H. E. Hughes and W. H. Akehurst, came to the conclusion that Mr. F. T. Fringe [illegible] was worthy of first prize for his display of signalling by the Morse code with the aid of a kite. [illegible] Mr. Charles Kruger, using a kite of his own design for life-saving from ship to shore, was awarded second prize, and Mr. W. James, using a Cumage quadroplane for kite photography, secured third prize. Among the other demonstrations given was that of raising lantern flares as distress signals and aerial advertising. The prizes distributed by Mrs. R. M. Balston were—1st, cheque £5, given by Mr. R. M. Balston, and cheque £1 and a 30s. Brookite given by Messrs. Brooks and Gillman, 3rd, silver model with gold centre given by the Council.

This above was preceded by a competition for boys for prizes given by the Aerial League. There were 23 competitors, but the strong wind proved very trying to the youthful enthusiasts, and several had to make more than one attempt before they finally got the kites properly launched. A large number of the owners were in the uniform of B.P. Scouts, while three of the prize winners were members of the aero club attached to Arcade House School, Surbiton. This is one of the oldest of school aero clubs and has had a very successful career. K. Mann and R. Geffins, both using quadroplanes, the former one of his own make, were bracketed equal for the first prize. C. Ridley, with a winged box-kite, was placed third, and K. C. Scarf fourth. As only three prizes were available Mr. E. Goddard, one of the Judges, presented a consolation prize of 10s.

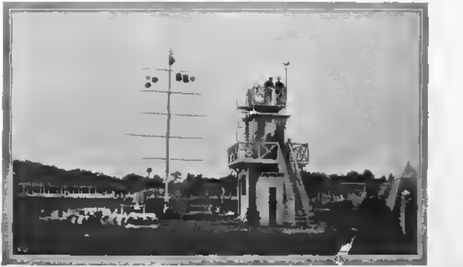
JUVISY FLIGHT MEETING.

Although several of the lesser known aviators made attempts to fly there was little of interest at Juvisy on the opening day of the flying fortnight on Thursday of last week beyond the flying of Comte Lambert and M. Gobron. The former completed eight rounds of the course, 16 kiloms., in 17 mins. 41 secs., while his attempt for the Seine General Council's prize over 10 kiloms. was made in 11 mins. M. Gobron secured the Mme. Quinton prize by flying 2 kiloms. in 2 mins. 7½ secs., Comte Lambert being second in 2 mins. 10 secs. There was no flying before about 4 o'clock in the afternoon, when De Vallières and Godard each brought out their Voisin machines and made long jumps of between 300 and 400 yards in length, but a little later the large crowd of people applauded vigorously at the sight of both Lambert and Gobron flying at the same time. Rain fell heavily during the following night, and on Friday the wind blew so strongly that there was not the slightest chance of any flying, the programme being consequently postponed.

Saturday morning brought forth no flying, but in the afternoon the proceedings were opened by Nabat, Godard and De Vallières, each of whom made an attempt for the Starting Prize, but none succeeded in remaining off the ground for the necessary kilom. De Lambert, after covering four rounds of the two kilom. course suddenly diverged from the track and made a figure eight before the grand stand, after which he completed two more laps before coming down. The only other flight was made by Richez on a Voisin machine, and he completed three rounds of the course.

Attracted by the fine weather and the announcement that Latham and Paulhan would probably be flying, tremendous crowds flocked to Juvisy last Sunday afternoon, and, as has been already recorded in the papers, the railway arrangements proved to be quite inadequate to cope with the rush. It is estimated that at least 100,000 people actually viewed the flights in the aerodrome, while about one and a half times that number must have watched the proceedings from the surrounding country. Not only was the railway congested, but the block of motor cars on the roads approaching Juvisy made it practically impossible to get near. The awful consequences of the railway traffic breakdown perhaps can best be realised from the fact that it was the cause of Mdlle. Géniat being late at the Comédie-Française, her part in the first act of *Monde où l'on s'ennuie* having to be played by her understudy. With regard to the flying the longest trip was made by Paulhan who completed eight circuits in 21 mins. 48¾ secs. As he was commencing his sixth lap De Lambert, on his Wright flyer, glided down the starting rail and went off in pursuit.

His machine is considerably faster, and he had almost covered four laps while Paulhan had been doing three. He completed seven laps in 15 mins. 32¾ secs. and was followed by Gobron, who went round the course four times in 9 mins. 20¼ secs. De Lambert secured the Scheurer-Kestner 1,000 francs prize for the best time over one lap, and the Neuflize prize for the best time over two laps. There was again no flying on Monday morning, and in the afternoon Nabat, on his Koechlin monoplane, was the first to open the ball, by flying some distance in a straight line. He was succeeded by Gobron, who, by covering one lap in 2 mins. 12¼ secs., secured the 1,000 francs prize for the fastest circuit of the day. De Lambert was the only one to make a lengthy flight, and he completed six laps in 14 mins. 10¾ secs.



SIGNALLING ARRANGEMENTS, JUDGES' BOX, &c., AT JUVISY AVIATION MEETING. The stands are seen in the distance. The same signalling code as in force at Rheims Meeting was adopted.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

(Note.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary.)

Coventry Aeronautical Society (18 and 19, Hertford Street).

At a meeting on the 7th inst., held at the King's Head Hotel, this Society was formally inaugurated, rules adopted, and officers elected. Mr. E. V. Vernon presided, and he was supported by a large number of gentlemen actively interested in the new science. The Chairman pointed out the great importance of having such a Society in Coventry, which had always been in the front in introducing new industries. If the new industry in connection with aviation was to take any strong position in the country they wanted Coventry to be its centre. Already a beginning had been made by the Humber Co., and they hoped this might be only a small thing as to the period of what there would be in the future.

The rules include the following: The subscription shall be £1 1s. for ordinary members, but the committee shall have power to elect members at a subscription of 10s. 6d. Such members must be either graduates or students in some technical or scientific field, or in such class as the committee may from time to time decide in advance. The Chairman explained that it was realised that there might be many people in Coventry who were interested in aviation—working men and students—who could not afford the guinea entrance fee, and on that account the proposal had been put forward to include student members and artisans at half the ordinary subscription.

Mr. E. W. Walford, who has worked so hard for the movement, was appointed secretary, and Mr. W. R. Shepherd treasurer. The election of a president was deferred, as several well known local gentlemen have been approached, but it was announced that Messrs. F. W. Lanchester, A. Herbert, O. Harmer, W. J. Iliffe, J. V. Pugh, W. Phillips, W. H. Herbert, W. Stone, E. French, H. Baker, T. Berry, — Jessop and M. G. Burford, had consented to act as vice-presidents.

Those interested in aeronautics wishing to join the Society as founder members may do so if their names are submitted during the next few days. The number joining at the meeting was nearly thirty.

Liverpool Aviation Society (13, Exchange Street West).

A competition and exhibition of models and parts thereof will be held at the Society's Aerodrome, Waterloo, on the 30th inst., at 2.30, events to commence at 3 p.m. Classes will be provided for models under 3 ft. span and over 3 ft. span, models propelled by clockwork and models propelled by elastic and other power, classes for mono-, bi-, multi- or any other description of plane, classes for "bought" models and classes for home-made models. There will also be an event, first, second and third prizes consisting of the Society's gold and silver medals, for the winners of the various events preceding the final event. A class for balloons and dirigibles will also be provided. The prizes will be for each event 1st and 2nd only, and will consist of the entrance fees to each class being divided into thirds, the winner to receive two-thirds, the second prize winner to receive one third. Height and stability will be taken into account in adjudging the best flight. All distances are to be measured from the starter's seat to the place where model lands, as the crow flies. Admission to the ground will be free. All entries should be sent in not later than the 25th inst., stating whether monoplane, biplane, multiplane, helicopter, orthopter, balloon or dirigible, or in the event of a section of a machine being shown, the part intended to be exhibited. The entrance fees will be for models under 3 ft. span from tip to tip, 1s. per model; models 3 ft. and over 3 ft. span, 2s. per model. Competitions are open to general public also.

Any member not having room to construct his models at home is requested to communicate with Mr. Folkes, of 19, Camden Street, who has accommodation of a limited nature to provide, free to members.

Midland Aero Club (The Bungalow, Stechford, Birmingham).

There was a crowded attendance at the general meeting of this club held on Wednesday last at the Grand Hotel, Birmingham. Capt. J. H. Cook presided, and was supported by the Mayor of Sutton Coldfield, Col. Massy, Lieut. Lempriere and many other well-known gentlemen, while messages of regret for absence were read from Sir Gerard Muntz, Sir Benjamin Stone, M.P., Sir Henry Newman, M.P., and others.

The Chairman, after welcoming those present, said that the question of affiliation had engaged the attention of the Council, but for the present they had decided to defer taking any active steps until some scheme of a national character had been formulated. With regard to other Aero Clubs in Birmingham, he said they watched the foundation and growth of these smaller institutions devoted to the same scientific aims with much sympathy and interest. They had, however, grave doubts whether the multiplication of societies having identical objects in the same area was desirable or beneficial, and led to waste of energy and talent.

A valuable acquisition to the club's resources was a balloon section, with the use of two balloons, which had been placed at their disposal by Lieut. Lempriere. The Council had also under consideration the question of providing a suitable club room with a reference library. The meeting decided that the necessary steps should be taken to form the club into a limited liability company, so as to limit the liability of members. This was considered a wise policy in view of the proposal to hold an aviation meeting in Sutton Park next summer. After the business meeting was over papers were read by Mr. A. P. Maxfield, on "The Building of an Aeroplane"; Mr. Ivy Rogers on "Impressions of a Flight with Mr. Cody"; and Mr. Granville E. Bradshaw also dealt with the building of a flyer.

S.W. England Aeronautical Soc. (51, St. Leonard's Rd., E. Sheen).

A committee meeting was held on Tuesday last, the 12th instant, at the Hammersmith Model and Electrical Works, when it was decided that the premises in Down Place, Hammersmith, were to be occupied on Monday, the 18th instant, and a model demonstration held in Bishop's Park, Fulham, on the 24th instant. The delegates for the International Conference are Mr. A. J. Francis, the secretary, and Mr. F. E. H. Johnson, a member of the committee.

A general meeting, at 7 o'clock, will follow the model demonstration on the 24th inst. All interested should communicate with the secretary.

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KITE FLYING AT WIMBLEDON.

Two very interesting competitions were carried out on Wimbledon Common by the Kite Flying Association on Saturday last. The most important was the competition for the best suggested use to which a kite can be applied. Seven entries were received, and they would have included demonstrations of the Cody man-lifting kites, but the War Office refused permission for these to be used. This was perhaps a pity, as it would have given the general public an opportunity of actually seeing what could be done with these appliances. After each competitor had demonstrated his suggestion, the Judges, Messrs. R. M. Balston, W. Bovill, C. Brogden, B. M. [illegible], H. E. Hughes and W. H. Akehurst, came to the conclusion that Mr. F. T. Prangnell was worthy of first prize for his display of signalling by the Morse code with the aid of a Brookite kite. Mr. Charles Kruger, using a kite of his own design for life saving from ship to shore, was awarded second prize, and Mr. W. Jones, using a Gamage quadroplane for kite photography, secured third prize. Among the other demonstrations given was that of raising beacon flares as distress signals and aerial advertising. The prizes, distributed by Mrs. R. M. Balston, were—1st, cheque £5 5s., given by Mr. R. M. Balston; 2nd, cheque £1 and a 30s. Brookite, given by Messrs. Brooke and [illegible]; 3rd, silver medal with gold centre, given by the Council.

The above was preceded by a competition for boys for prizes given by the Aerial League. There were 23 competitors, but the strong wind proved very trying to the youthful enthusiasts, and several had to make more than one attempt before they finally got the kites properly launched. A large number of the entrants were in the uniform of B.P. Scouts, while three of the prize winners were members of an aero club attached to Arundel House School, Surbiton. This is one of the oldest of school aero clubs, and has had a very successful career. R. Mace and R. Griffiths, both using quadroplanes, the former one of his own make, were bracketed equal for the first prize. C. Ridley, with a winged box-kite, was placed third, and K. C. Searl fourth. As only three prizes were available, Mr. E. Goddard, one of the judges, presented a consolation prize of 10s.

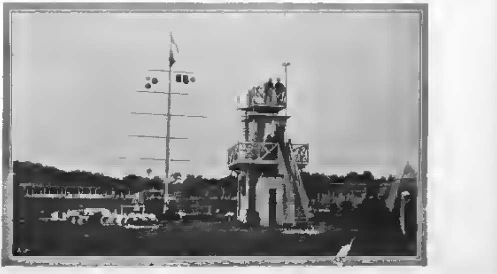
JUVISY FLIGHT MEETING.

Although several of the lesser known aviators made attempts to fly there was little of interest at Juvisy on the opening day of the flying fortnight on Thursday of last week beyond the flying of Comte Lambert and M. Gobron. The former completed eight rounds of the course, 16 kiloms. in 17 mins. 41 secs., while his attempt for the Seine General Council's prize over 10 kiloms. was made in 11 mins. M. Gobron secured the Mme. Quinton prize by flying 2 kiloms. in 2 mins. 7¾ secs., Comte Lambert being second in 2 mins. 10 secs. There was no flying before about 4 o'clock in the afternoon, when De Vallieres and Godard each brought out their Voisin machines and made long jumps of between 300 and 400 yards in length, but a little later the large crowd of people applauded vigorously at the sight of both Lambert and Gobron flying at the same time. Rain fell heavily during the following night, and on Friday the wind blew so strongly that there was not the slightest chance of any flying the programme being consequently postponed.

Saturday morning brought forth no flying, but in the afternoon the proceedings were opened by Nebat, Godard and De Vallieres, each of whom made an attempt for the Starting Prize, but none succeeded in remaining off the ground for the necessary kilom. De Lambert, after covering four rounds of the two kilom. course suddenly diverged from the track and made a figure eight before the grand stand, after which he completed two more laps before coming down. The only other flight was made by R[illegible]ches on a Voisin machine, and he completed three rounds of the course.

Attracted by the fine weather and the announcement that Latham and Paulhan would probably be flying, tremendous crowds flocked to Juvisy last Sunday afternoon, and, as has been already recorded in the papers, the railway arrangements proved to be quite inadequate to cope with the rush. It is estimated that at least 100,000 people actually viewed the flights in the aerodrome, while about one and a half times that number must have watched the proceedings from the surrounding country. Not only was the railway congested, but the block of motor cars on the roads approaching Juvisy made it practically impossible to get near. The awful consequences of the railway traffic breakdown perhaps can best be realised from the fact that it was the cause of Mdlle. Géniat being late at the Comédie Française, her part in the first act of *Monde ou l'on s'ennuie* having to be played by her understudy. With regard to the flying the longest trip was made by Paulhan who completed eight circuits in 21 mins. 48⅕ secs. As he was commencing his sixth lap De Lambert, on his Wright flyer, glided down the starting rail and went off in pursuit.

His machine is considerably faster and he had almost covered four laps while Paulhan had been doing three. He completed seven laps in 15 mins. 32⅘ secs. and was followed by Gobron, who went round the course four times in 9 mins. 20⅕ secs. De Lambert secured the Scheurer-Kestner 1,000 francs prize for the best time over one lap, and the Neufize prize for the best time over two laps. There was again no flying on Monday morning, and in the afternoon Nabat, on his Koechlin monoplane, was the first to open the ball, by flying some distance in a straight line. He was succeeded by Gobron who, by covering one lap in 1 min. 12¾ secs., secured the 1,000 francs prize for the fastest circuit of the day. De Lambert was the only one to make a lengthy flight, and he completed six laps in 14 mins. 10¾ secs.



SIGNALLING ARRANGEMENTS, JUDGES' BOX, &c., AT JUVISY AVIATION MEETING.—The stands are seen in the distance. The same signalling code as in force at Rheims Meeting was adopted.

Tuesday, the sixth day of the meeting, was credited with only one good flight, that of Paulhan, who was in the air for just on 42 mins. He first completed the necessary three laps in an attempt for the slow prize, taking 6 mins. 11 secs. for the six kiloms. Without coming down he continued his flight for the total distance prize, but this attempt only commenced from the beginning of the fourth lap, after which Paulhan completed sixteen circuits in 32 mins. 50⅗ secs. Previous to this flight Paulhan had made a trial on the Voisin biplane, belonging to the Port Aviation authorities, which had been fitted with a new propeller. Two rounds of the course were made, and everything appeared to work satisfactorily. Gobron was the only other aviator to fly the complete circuit on Tuesday, and he completed the round in 2 mins. 33⅕ secs. On Wednesday, although a gusty wind prevailed, there was a little more flying, for Comte de Lambert was flying as well as Paulhan. The latter did not stay up longer than 11 mins. 8 secs., during which time he covered 9.4 kiloms., while Lambert traversed 6.8 kiloms. in 7 mins. 21 secs. Gobron did one round in 2 mins. 17⅘ secs. Mr. Latham made an attempt to fly during the afternoon, but by some means the machine tilted just as it was leaving the ground, and coming down on one wing smashed it rather badly.

FRANKFORT MEETING

On the 5th inst., the opening day of the Frankfort meeting, there was very little flying, Rougier only making a couple of flights of between seven and eight minutes duration, in the course of one of which he flew over the "Parseval III," a performance which naturally raised the enthusiasm of the crowd to a high pitch. Nervoe was the only other flyer to get off the ground, and he succeeded in coaxing his Voisin to make one circuit of the course. Herr Sidow, a German aviator, tried to fly with a monoplane of his own design, but the machine turned over as soon as it started. With good luck, the aviator escaped unhurt.

On the next day a large crowd assembled in the hope of seeing Mr. Latham fly, but the heavy rains had so sodden the ground that the wheels of his machine kept sinking. He made several valiant attempts to get up in the air, finally having to give it up. Although Rougier did not fly for more than three circuits, he reached an altitude of about 150 metres, and this was received with due appreciation. Nervoe again made one or two short flights. On the 8th storms of wind and rain rendered flying out of the question, but on Friday of last week M. Bleriot was seen at work, and he had little difficulty in capturing the prizes, although Baron de Caters put up a good fight for them. M. Bleriot made four flights, the first of 11 mins., the second of 3½ mins., the third of 17¾ mins., and the fourth of 6 mins. One round he completed in 1 min. 17 secs., and for this he was awarded the speed prize, Baron de Caters being second in 1 min. 18⅘ secs. The following day saw both these aviators flying for over an hour in competition for the City of Frankfort prize. Bleriot succeeded in putting up the best performance by covering 60 laps in 1 hr. 12 mins., while de Caters only completed 54 laps, but his time of 1 hr. 17 mins. was five minutes longer, consequently he secured the prize. The meeting concluded on Monday, when there was the height competition for the Krupp Prize. Competitors were asked to fly under and over three wires placed at a height of 15 metres, and separated by a distance of 200 metres. In this M. Bleriot was awarded first place, with Baron de Caters second. The full list of prizes awarded was as follows:—

Distance Competition.—Baron de Caters, City of Frankfort prize of 40,000 marks (£2,000); M. Bleriot, second prize of 10,000 marks (£500).

Height Competition.—Krupp prize of 10,000 marks (£500), M. Bleriot; second prize, Polytechnic Company's prize of 5,000 marks (£250), Baron de Caters.

Five Kilometres Speed Competition.—First prize of 2,400 marks (£120), M. Bleriot; second prize of 1,600 marks (£80), Baron de Caters.

LONDON TO MANCHESTER FLIGHT.

MR. CODY'S DISAPPOINTMENT

Large crowds gathered at all vantage points along the route of Mr. Cody's projected flight to Manchester from early hours on Saturday morning, but like the aviator himself they were doomed to disappointment. The motor refused to work satisfactorily owing, it is stated, to the crank-case being allowed to become full of lubricating oil. After four attempts to fly, in which the longest sustained flight was of about a mile, Mr. Cody decided to abandon all further attempts for the *Daily Mail* £10,000 prize until after the Doncaster meeting. The first flight was made soon after seven o'clock, and then, in an endeavour to rectify matters, the engine was taken down and cleaned. Still further delay was occasioned by the discovery that owing to some petrol thus being left out in the rain the petrol was contaminated with water. These various delays occupied till eleven o'clock, when Mr. Cody decided to abandon his attempt and proceeded to at once pack up his machine for despatch to Doncaster.

On the 8th Mr. Cody went up on his aeroplane with the intention of making a two hours flight, but only kept going for about five minutes, as he found the wind blowing much too strong for his liking.

MR. G. A. BARNES—ANOTHER BRITISH AVIATOR FLIES.

With a monoplane of his own make, somewhat on the lines of the Bleriot, Mr. G. A. Barnes, well-known a few years back as a racing motor cyclist, succeeded on Monday in flying for a distance of well over a mile and a half, very nearly completing a circle, at Abbey Wood, near Woolwich. Mr. Barnes kept the machine fairly close to the ground, and this probably accounted for the accident which brought the trial flight to a conclusion. In crossing a ditch the machine was suddenly tilted, causing the rear wheels to run into the ditch and damage the framework. This will, however, be put right in a few days, and Mr. Barnes then hopes to make an attempt for the *Daily Mail* prize for a circular mile flight. He is using a 20-h.p. J.A.P. motor.

AVIATION NOTES OF THE WEEK.

The Humphreys Monoplane.

WITH his latest machine Mr. Jack Humphreys promises to do very well but at Wivenhoe he is sadly handicapped by the nature of his aerodrome, as it is intersected by the river Colne and several ditches. It was in fact one of these latter which brought him to grief on Saturday when he made an attempt for the *Daily Mail* £1,000 prize for a circular flight. Mr. Humphreys had not quite cleared the ground when he was called upon to cross a ditch, and the rear wheels sank into it, causing the machine to lurch over to one side and smashing it. Mr. Humphreys was unhurt, but it will be some time before his monoplane will be repaired and ready to take the air again. With such pluck and perseverance as Mr. Humphreys possesses he should not be long in making himself heard of as an aviator.

Flight Lectures in East London.

WE would direct the attention of our readers in East London to an announcement in our advertisement columns concerning a course of lectures on aeronautics, which, through the generosity of Mr. Patrick Alexander, it has been possible to arrange at the East London College. The course commences on Monday next and the lecturer will be Mr. A. P. Thurston.

A "Green" Engine for Aldershot.

LAST week Lieuts. Dunne and Gibbs were present at a test of the 50–60-h.p. "Green" engine, which has been built to the order of Col. Capper, C.B., R.E., and expressed satisfaction at the result of the test. An order has been placed with the Green's Motor Patents Syndicate by H.M. War Office for a 30-h.p. engine which will be used in the experimental dirigible "Baby" at Aldershot.

Another Cross-Country Flight by Maurice Farman.

ALTHOUGH nothing has been heard of Mr. Maurice Farman since his cross-country flight recorded in our issue of October 2nd last, he has been quietly practising at Toussus-le-Noble, and on Tuesday morning last he flew for half an hour, during which time he made four circuits over the surrounding country. It is estimated that his circuit over Voisins, Mérantais, Chateaufort, Villiers-le-Bacle and Orsigny measured 10 kilometres round.

A Speed Record by Wilbur Wright.

ON the 9th inst. Wilbur Wright succeeded in attaining a record speed over a course of one kilometre out and home. A post was fixed in the ground 500 metres from the starting point, and Wilbur Wright completed his course in 58⅗ secs., equal to speed of 74 kilometres, or 46 miles per hour.

Paulhan Changes His Mount.

AFTER having been very successful as a pilot of Voisin machines M. Paulhan has decided upon a change, and on the 7th inst. paid a visit to Chalons Camp in order to be instructed in a Farman machine, with which he intends to fly at Blackpool. Doubtless his previous experience stood him in good stead, for after only a few minutes' explanation he took his seat at the wheel, and rising steadily soared over the camp for an hour. He then came down, landing without the slightest difficulty, but after a few minutes was aloft again and once more remained in the air for an hour. This augurs well for his future as a manipulator of Farman flyers.

Trial Flights and New Recruits.

ON the 5th inst. at Issy M. Fernandez succeeded in getting off the ground for the first time and covered a distance of about 200 metres. The same day MM. Balsan and Blanck were practising on their Bleriot machines and the former flew round the ground several times, and he got on so well that last Sunday his record flight stood at 25 kilometres.

At Dunkirk, Baratoux has been continuing his practice with his Wright flyer, and on Saturday last he flew for about nine minutes, during which he several times described a figure of eight.

Guyot has been making satisfactory progress with his monoplane at Toury, where last week he several times made flights of from two to five kiloms. in length.

The ranks of aviators are to be swelled by two more Continental cyclists, Obeslagers having decided to invest in a Bleriot monoplane, while Vandenborn has ordered a Farman biplane. Bablot, who has successfully driven Brasier racing cars at many of the big French hill-climbs, will shortly be seen piloting a Wright biplane fitted with a Brasier motor.

Progress of Herr Grade.

ON Sunday last, Herr Grade on his monoplane beat all his own records by flying for 11 mins. 12 secs., making six rounds of his course at Bork, near Berlin, a distance of 13 kilometres. He has announced his intention of making an early attempt to fly across country from Bork to Johannisthal, a distance of about 20 kilometres.

Juvisy Aviation Meeting.

OWING to the extended time of the French flight meeting at Juvisy, the special tickets advertised by the South-Eastern and Chatham Railway are still on sale on Friday and Saturday of this week.

* * *

CORRESPONDENCE.

*** *The names and addresses of the writers (not necessarily for publication)* MUST *in all cases accompany letters intended for insertion, or containing queries.*

METAL *VERSUS* WOOD AEROPLANE PROPELLERS.

To the Editor of FLIGHT.

SIR,—I notice that the French Government are discarding the metal propeller of "La Republique" in favour of a wooden one. This seems to me to be a very retrograde policy. It is known that wooden propellers are affected very materially by heat, damp, &c., and that they are not sufficiently rigid, and are for these reasons most unreliable. The propeller used on "La Republique" was of this type, but there is at the present time on the market a propeller which is infinitely superior to any that have yet been used, and it is constructed of steel and aluminium, the vane being carved downwards towards the ends of the spindle or shaft upon which it revolves and thereby making a very strong and light propeller which is not affected by shocks, a 6 ft. 6 in. propeller weighing only from 13 to 14 lbs. We have had these propellers revolving at extremely high speeds without any sign of their giving way at any point, and we are now making them for M. Blériot, Capt. Windham, and many others, but they can be run, if desired, at a slow speed, and owing to the very large area of the blades, they have been proved to give a much greater thrust than any other propeller.

Thinking this may be of some interest to the public,

We beg to remain,
Yours faithfully,
HENRY J. ROBERTS.

CLOCKWORK MOTORS.

To the Editor of FLIGHT.

SIR,—Could you supply me with the name or names of any firm who make a speciality of clockwork motors suitable for model aeroplane? I have a 3 ft. model biplane which I proposed to drive by compressed air, but the space 6 in. by 3 in., is too small, so have had to get a clock-motor specially made for it. It is not quite completed yet.

Thanking you in anticipation,

Yours faithfully,
H. R. EAMES.

c/o J. Inglis and Co., Ltd.,
60–62, York Street, Sydney, N.S.W., Aus.

TERMS IN FLIGHT

To the Editor of FLIGHT.

SIR,—Kindly allow me to suggest that the gentlemen who put in type my letter appearing in your issue of October 9th, are merry fellows; given to "flights" of fancy, at least. I wrote "docks," but they made it "ducks"! An omission of a comma gives "the biplane six upper wings"!

They perhaps were thinking of landrails or water-rails when they put "counter-rails." The word "countervail" must be most unfamiliar to the sportsman. Had they been yachtsmen they would have put taffrail instead of counter-rail if either word was connected with flying.

The use of the word "banking" for the voluntary inclination given to the machine to assist turning, is rather clumsy in use. To my mind a far better term would be "listing." Almost as good is "heeling." But "list," "listing," "listed" to right or left, with "right list" or "left list" are terms that would be clear to the boating man and many others.

It should be quite clear, however, that by "right list" I mean the inclination to the right, or the depression of the right wing. I presume "banking" is the other way? By banking to the right we get the left list, and vice versa.

Faithfully yours,
T. OSBORN SMITH.

To the Editor of FLIGHT.

SIR,—Reverting to Mr. T. O. Smith's letter on the above subject in your last issue, where on earth he unearthed such grotesque terms from, is a puzzle to most aeronautical engineers; let us hope, however, that such enormities as "lift," "leach," "lances," "wings," &c. &c. will be relegated to a decent oblivion.

I note your correspondent quotes a term he calls "stabiliser"—probably the French "stabilisateur" is the word Mr. Smith is in search of, and he will find this term used in my lecture on "The Problems of Flight," published in *Engineering* over a year ago.

While on the subject of the word "stabiliser," do you not think, Sir, that "longitudinal stabilisator" and "lateral stabilisators" are suitable terms for what are commonly called "elevators" and "balancing planes" or "ailerons"?

The foregoing terms are concise, whilst the latter are somewhat misleading.

It has always been our practice to use the terms "longitudinal" and "lateral stabilisators."

Yours truly,
E. V. HAMMOND, M.E.
Balham. Aeronautical Constructor.

MOTORS FOR FLYERS.

To the Editor of FLIGHT.

SIR,—I have just seen a letter in a recent issue of your paper *re* demand for British aeroplane motors, which suggests that there are hundreds of orders waiting for any firm who can produce a British-built aeroplane, and it is suggested that the greatest obstacle in the way of the production of this machine is the fact that a satisfactory British engine has not yet been produced for aeroplane work.

I can hardly think your correspondent is correct in saying this, because it is a well-known fact that there are firms in this country actually sending aeroplane engines to France, and that French manufacturers of some aeroplanes are using these British engines, and obtaining more money than if a French engine is fitted, thus showing their opinion of the British aeroplane engine.

Yours truly,
S. F. EDGE.

To the Editor of FLIGHT.

SIR,—I am glad to find that my letter relating to the demand for British aerial motors has brought replies from more than one manufacturer. It is a fact that engines have been produced by a few firms, but up to the moment very little real and practical work has been accomplished.

I repeat that a huge demand does exist for a light aerial motor at a reasonable price, and British manufacturers have not yet risen to the occasion as they ought.

The foreigner has already got a lead, but there is no reason why he should keep it.

I feel sure that the Blackpool meeting will stimulate public interest, and it is to be hoped that the English aviators will do something to show that we are fully alive to the great possibilities of this new science. Since the publication of my letter Mr. Patrick Alexander has come forward and offered a very handsome prize for a British motor, and it now rests with the manufacturers themselves to prove that we can and will hold our own amongst all the nations of the world.

Yours faithfully,
JNO. W. BROWN.

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Aeronautical Patents Published

Applied for in 1908.

Published September 30th, 1909.

[illegible] A. E. Hose [illegible] A. Hunter. Dirigible balloons.
[illegible] J. E. Proctor. Airships.

Published October 7th, 1909.

[illegible] J. E. Franks. Aeroplanes.

Applied for in 1909.

Published September 30th, 1909.

[illegible] A. W. and W. C. Dennis. Flying machines.
[illegible] G. and W. Wright. Flying machines.
[illegible] J. A. Rignor. Airships.
[illegible] R. Wac[illegible] C. E. Von Ras[illegible]. Airships.

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